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Syrphidae Tatr Polskich (*Diptera*)

Syrphidae польской области Татр (*Diptera*)

The *Syrphidae* of the Polish Tatra Mts. (*Diptera*)

INTRODUCTION

The southern part of Poland — thanks to the investigations of BOBEK (1890, 1892, 1894), NOWICKI (1867, 1869a, 1869b, 1873), GRZEGORZEK (1872), and LOEW (1870) — is comparatively well described in its dipterological aspect.

The first faunistic list of the Tatran flies was published in 1867 by NOWICKI. His list of *Diptera* was made according to the zones of vegetation (see next page). The species from the forest („Regle“) zone, from the alpine pasture zone, and from the subnivean zone were quoted separately. The investigations were continued in later years by NOWICKI (1868, 1869a, 1869b, 1873), as well as by LOEW (1870) and BOBEK (1890).

A basic faunistic complete flies-list for the area of former Austrian Galicia (as well as for the Tatra Mts.) was compiled by NOWICKI (1873). NOWICKI, however, does not take into account the time of appearance of the se-

parate species, and quotes the place of their appearance rather vaguely (e. g. Tatra Mts., Podolia, etc.).

The state of knowledge on the Tattran fauna of the Dipteran family *Syrphidae* is based till now on the material of data supplied by the research workers named above. In 1954 MOUCHA and ŠTYS published a paper on the vertical distribution of the Dipteran family *Syrphidae* in Czechoslovakia. Their paper also takes into account the materials collected in the Slovak Tatra Mts.

The information on the distribution of the flies from the family *Syrphidae* in other parts of Poland is contained mainly in faunistic lists comprising either all the *Diptera* or a large proportion of their species. In Silesia the family *Syrphidae* was described separately by SCHUMMEL (1841). This paper was complemented by the investigations of LOEW (1843, 1857) and ZELLER (1843), and in later years by the papers of BECKER (1894), PAX (1921), and MALSKI (1957). The data on the Dipteran fauna of the Sudety Mts. were published by VIMMER (1908) and CZIŻEK (1909). A basic list of the fauna of central Poland was published by SZNABL (1881). The *Syrphidae* of the environs of Warszawa were described separately by TROJAN (1953). SACK (1925) quoted several alpine species in a list of *Diptera* from the Forest of Białowieża. Eastern Pomerania and the Mazury District (formerly Eastern Prussia) were investigated by CZWALINA (1893), Western Pomerania by KARL (1935). The quoted basic faunistic papers allow only a very superficial orientation in the distribution of species of the family *Syrphidae* in Poland.

The systematical arrangement adopted in the present paper is a compilatory list based chiefly on a paper by SACK (1932), as well as those of other later authors.

In a more detailed list of living-places of the separate species also those areas were taken into account which do not belong to the proper Tatra Mts. but belong to the so-called Subtattran Land („Podtatrze“, e. g. Mt. Gubałówka, Bukowina, etc.). This list adopts a division into vegetation zones according to PAWŁOWSKI (1956) and uses his abbreviations for those:

Sub-mountain zone „Pogórze“ (Pog). Altitude below 700 metres.

Lower forest zone „Regiel dolny“ (Rd) — 700—1250 metres.

Upper forest zone „Regiel górny“ (Rg) — 1250—1550 metres.

Dwarf pine or subalpine zone „Kosówka“ (K) — 1550—1800 metres.

Pasture or alpine zone „Hale“ (H) — 1800—2300 metres.

Rocky summit or subnivean zone „Turnie“ (T) — 2300—2663 metres.

The present paper is based on scientific materials collected by the author in the years 1956 and 1957 in the Tatra National Park; his investigations formed a part of those made by the Kraków Branch of the Institute of Zoology, Polish Academy of Science. The present paper also takes into account the material of *Diptera* collected in the Tatra Mts. in the years 1950—1954 by Professor R. WOJTUSIAK and a team of his collaborators. These materials were collected according to a definite oecological notation and some data from the latter were used by the author.

The collection of I. KRÓL, now placed in the Department of Zoology, College of Agriculture, Kraków, as well as the collection of Z. ZAĆWILICHOWSKA, now being in the Kraków Branch of the Institute of Zoology, Polish Academy of Science, were also used in this paper. The author was also allowed to dispose of the collection of M. NOWICKI, preserved in the Department of Zoology, Jagiellonian University, Kraków. The *Diptera* from this collection belonging to the family *Syrphidae* and collected in the Tatra Mts. were determined anew, and the author partly took into account the obtained results for his detailed list of species from the Tatra Mts. (In the detailed list of species only those specimens from NOWICKI's collections were named which possess a distinct labels testifying that the specimen was caught in the Tatra Mts.). The proof material for the present paper collected by the author as well as that taken from the collection of Z. ZAĆWILICHOWSKA are in the Zoological Institute, Polish Academy of Science, Kraków.

The author wishes to thank Professor Z. KAWECKI, Professor St. SMRECZYŃSKI, and Professor R. WOJTUSIAK for kindly giving access to the fore-named collections. Owing to their help the scientific material collected may be a sufficient basis to represent the faunistic relations and to characterise the zoogeography of the Dipteran species of the family *Syrphidae* appearing in the Polish Tatra Mts.

DETAILED LIST OF SPECIES

Subfam. *Syrphinae*Gen. *Didea* MACQUART 1834***D. alneti* (FALL. 1817).**

Tatra Mts.: 1 ♂ and 1 ♀ in M. NOWICKI's collection.

(Rg): Mt. Żar (ca 1540 m): 1 ♀, 27. VII. 1956; 1 ♂, 9. VIII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; BOBEK, 1890), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935).

General distrib.: Appears in the mountains of Europe and in Japan. Rather rare in the lowlands. Quoted from the Alps (FRANZ, 1943).

***D. fasciata* MACQ. 1834.**

Tatra Mts.: In M. NOWICKI's collection: 1 ♀ caught June 5th.

(Pog): Bukowina: 1 ♀, 26. VII. 1921, leg. Z. ZAĆWILICHOWSKA.

(K): Pańszczyca Valley (1650 m): 1 ♀, 4. VII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), near Częstochowa (TROJAN, 1953), western Pomerania (KARL, 1935).

General distrib.: central and southern Europe. Also quoted from Belgium (LECLERCQ, 1950) and the British Isles (KLOET & HINCKS, 1945).

Gen. *Ischyrosyrphus* BIGOT 1882***I. glaucius* (L. 1758).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

(Pog): Bukowina: 2 ♀♀, 14 and 22. VII. 1921, leg. Z. ZAĆWILICHOWSKA.

(Rd): Droga pod Reglami (ca 1000 m): 1 ♀, 11. VII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; „northern slope of Mt. Hruby Regiel“, BOBEK, 1890), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935).

General distrib.: Europe. Common in lower mountain situations.

***I. laternarius* (O. F. MÜLLER 1776).**

Tatra Mts.: (Rg): Quoted by BOBEK (1890) from „the northern slope of Mt. Hruby Regiel“.

Poland: Environs of Kraków (NOWICKI, 1873).

General distrib.: Holarctic. Common in the mountains, rare in the lowlands.

***I. liophthalmus* (SCHIN. & EGG. 1853).**

Tatra Mts.: (Rg): Mt. Kobylarz (ca 1450 m): 1 ♂, 29. VII. 1951, *Potentilla Crantzii* BECK., leg. R. WOJTUSIAK.

Poland: Species new for Poland.

General distrib.: Central Europe (SACK, 1932). Also quoted from Roumania (SUSTER, 1932) and Belgium (LECLERCQ, 1950).

Gen. *Scaeva* FABRICIUS 1805

(Syn. *Lasiopticus* RONDANI 1884)

***S. pyrastris* (L. 1758).**

Tatra Mts.: 3 ♀♀ in M. NOWICKI's collection.

(Pog.): Zakopane: 2 ♀♀, 8. VII. 1911, leg. I. KRÓL.

Mt. Gubałówka (1100 m): 3 ♀♀, 1—6. VIII. 1952, *Centaurea* sp., *Epilobium* sp.; 6 ♀♀, 13. VII. — 11. VIII. 1952, *Centaurea* sp., *Polygonum* sp., *Helichrysum arenarium* MOENCH., *Senecio* sp., *Hieracium* sp., leg. R. WOJTUSIAK.

(Rd): Przysłop Migtusi (1187 m): 1 ♂, 7. VII. 1957, leg. author.

(Rg): Wielka Świstówka (1350 m): 1 ♀, 18. VII. 1952, *Dianthus praecox* W. K., leg. author.

(H): Quoted by NOWICKI (1867).

(T): Quoted by NOWICKI (1867).

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Karkonosze Mts. (VIMMER, 1908), Białowieża Forest (SACK, 1925), Warszawa, Skierniewice, Siedlce, Chodecz (SZNABL,

1881), environs of Warszawa (TROJAN, 1953), western Pomerania (KARL, 1935).

General distrib.: Europe, northern Africa, western and northern Asia, America.

***S. selenitica* (MEIGEN 1822).**

Tatra Mts.: 2 ♀♀ and 1 ♂ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♀, 15. VII. 1921, leg. Z. ZAĆWILICHOWSKA.

(Rd): Kościeliska Valley (950 m): 2 ♀♀, 2. VII. 1957, leg. author.

(Rg): Wielka Świstówka (1350 m): 1 ♂, 20. VII. 1951, *Thymus* sp., 1 ♂, 30. VII. 1952, *Centaurea* sp., leg. R. WOJTUSIAK.

(K): Walentkowa Valley (ca 1700 m): 1 ♂ and 1 ♀, 23. VII. 1920, leg. I. KRÓL.

Poland: Tatra Mts. (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Przemyśl (NOWICKI, 1870), Warszawa, Ciechocinek (SZNABL, 1881), western Pomerania (KARL, 1935), environs of Warszawa (TROJAN, 1953).

General distrib.: Europe, northern Africa, western and northern Asia, America.

Gen. *Syrphus* FABRICIUS 1775

***S. annulipes* (ZETT. 1838).**

Tatra Mts.: 4 ♀♀ and 2 ♂♂ in M. NOWICKI's collection.

(Rd): Kościeliska Valley (ca. 1000 m): 3 ♀♀, 16—22. VII. 1956, leg. author; Strażyska Valley (1040 m): 1 ♀, 7. VI. 1920, leg. I. KRÓL; Mała Łąka Valley (ca 1190 m): 1 ♀, 9. VIII. 1956, and 1 ♀, 6. VII. 1957, leg. author.

(Rg): Mt. Łysańki (1447 m): 1 ♀, 7. VIII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935).

General distrib.: Europe.

***S. arcuatus* (FALL. 1817).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (ca 900 m): 3 ♂♂, 24. VII. 1953, *Hypericum perforatum* L., *Veronica* sp., *Cerastium* sp.; 4 ♀♀, 3. VII. — 11.

VIII. 1953, *Hypericum* sp., *Phyteuma orbiculare* L., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 2 ♀♀, 27. VII. 1954; *Hypericum* sp., leg. R. WOJTUSIAK; Droga pod Reglami (ca 900 m): 1 ♀, 23. VII. 1957; Kuźnice (ca 1000 m): 2 ♀♀, 6. VII. 1957; Strążyska Valley (1040 m): 1 ♀, 18. VII. 1956; Mała Łąka Valley (ca 1190 m): 1 ♀, 6. VII. 1957; Przysłop Miętusi (1187 m): 1 ♀, 7. VII. 1957, leg. author.

(Rg): Jaworzynka Miętusia (1290 m): 3 ♀♀, 23—28. VII. 1953, *Aconitum callibotryon* RCHB., *Gypsophila repens* L., *Campanula rotundifolia* L.; Wielka Świstówka (1350 m): 2 ♀♀, 23—25. VII. 1953, *Saxifraga aizoides* L., *Ranunculus* sp.; Mt. Kobylarz (1440 m): 1 ♀, 23. VII. 1953, *Geranium silvaticum* L., leg. R. WOJTUSIAK. Mt. Łysanki (1447 m): 1 ♀, 4. VII. 1957; Sucha Woda Valley (Gaśienicowa) (ca 1450 m): 1 ♀, 27. VI. 1957; Mt. Żar (1540 m): 2 ♀♀, 16. VII. 1956 and 9. VIII. 1956, leg. author.

(H): Krzyżne Pass (2113 m): 1 ♀, 3. VII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; BOBEK, 1890), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935), environs of Kraków (NOWICKI, 1873).

General distrib.: Europe, Japan, Siberia, North America.

***S. braueri* EGG. 1858.**

Tatra Mts.: (Pog): Bukowina, 2 ♀♀, 11. and 14. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Belanské Tatry: Zdiarska vidlá, 2148 m (MOUCHA & ŠTYS, 1954).

Poland: Mt. Babia Góra (NOWICKI, 1873): 1 ♂ in M. NOWICKI's collection.

General distrib.: The species appears in the mountains of central Europe.

***S. corollae* FABR. 1794.**

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 3 ♂♂, 30. VI. 1951, 2. VIII. 1952, 9. VIII. 1952, *Veronica* sp., *Centaurea* sp., *Calluna vulgaris* SALISB., 1 ♀, 9. VIII. 1952, *Calluna vulgaris* SALISB., Gubałówka (900 m): 2 ♀♀, 22. VII. 1952, *Chrysanthemum* sp., *Veronica* sp., leg. R. WOJTUSIAK.

(Rg): Mt. Żar (1540 m): 1 ♂, 9. VIII. 1956, 7 ♀♀, 18. VII. and 9. VIII. 1956, leg. author.

Vysoké Tatry: Tupá, 2000 m; Belanské Tatry: Košiary, 2000 m (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909); southern Poland (formerly Austrian Galicia) — (NOWICKI, 1873), Warszawa, Skierniewice, Chodecz (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925).

General distrib.: Holarctic.

***S. lapponicus* (ZETT. 1838).**

Tatra Mts.: 2 ♀♀ in M. NOWICKI's collection.

(Rg): Mt. Żar (1540 m): 1 ♀, 16. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873).

General distrib.: Boreo-alpine species. In the north it appears circumpolarly: Arctic North America, Greenland, Finland, Siberia — and in the Alps (FRANZ, 1943). Also quoted from the British Isles (COE, 1953), Belgium (LECLERCQ, 1950), and Czechoslovakia: Kralický Sněžník, 1100—1400 m; Rigliany Potok, 1200 m (MOUCHA & ŠTYS, 1954).

***S. latifasciatus* MACQ. 1828.**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935), Tuchola Forest (RÜBSAAMEN, 1901).

General distrib.: Europe, North America.

***S. luniger* MEIG. 1822.**

Tatra Mts.: 3 ♂♂ and 1 ♀ in M. NOWICKI's collection.

(Rd): Mała Łąka Valley (1197 m): 1 ♀, 6. VII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Chodecz (SZNABL, 1881), eastern Sudety Mts. (CZIŻEK, 1909), environs of Warszawa (TROJAN, 1953), western Pomerania (KARL, 1935).

General distrib.: Palaearctic (Japan excepted).

***S. lunulatus* MEIG. 1822.**

Tatra Mts.: 3 ♂♂ and 3 ♀♀ in M. NOWICKI's collection.

(Rd): Droga pod Reglami (ca 1000 m): 1 ♀, 22. VI. 1951; Strażyska Valley (1040 m): 1 ♀, 22. VII. 1957; Przysłop Miętusi (1187 m): 1 ♀, 7. VII. 1957, leg. author.

(Rg): Sucha Woda Valley (Gąsienicowa) — (ca 1400 m): 2 ♂♂ and 3 ♀♀, 24—27. VI. 1957; Mt. Żar (1540 m): 1 ♀, 16. VII. 1956, leg. author.

(K): Pańszczyca Valley (ca 1600 m): 6 ♀♀, 21. VI. — 22. VII. 1956; Valley of the Gąsienicowe Lakes (ca 1650 m): 1 ♂ and 7 ♀♀, 26—27. VI. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), Sącz Valley (GRZEGORZEK, 1872), western Pomerania (KARL, 1935).

General distrib.: Europe, Groenland.

***S. nitens* (ZETT. 1843).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 1 ♂, 2. VIII. 1952, *Centaurea* sp., leg. R. WOJTUSIAK.

Poland: western Pomerania (KARL, 1935), environs of Warszawa (TROJAN, 1953).

General distrib.: Europe, Japan.

***S. ribesii* (L. 1758).**

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (900 m): 1 ♂, 3. VII. 1954, *Thymus* sp., leg. author.

(Rd): Kościeliska Valley (950 m): 4 ♀♀, 2. VII. — 8. VII. 1957; Kuźnice (ca 1000 m): 2 ♀♀, 27. VII. 1956; Strażyska Valley (1040 m): 2 ♂♂ and 1 ♀, 4. VII. 1957, 9. VIII. 1956; Hala Ornak pasture (1100 m): 4 ♀♀, 9. VIII. 1956, leg. author.

(Rg): Mt. Łysanki (1447 m): 1 ♂, 18. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. „from the alpine pasture zone“ (NOWICKI, 1868), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Tatra Mts.: „glade Uplaz below Mts. Czerwone Wierchy, 30. VII.; northern slope of Mt. Hruby Regiel, near the stream Bystra, VIII“ (BOBEK, 1890); Sącz Valley (GRZEGORZEK, 1872), Kalwaria (BOBEK, 1892), eastern Sudety Mts. (CZIŻEK,

1909), Warszawa, Skierniewice, Siedlce, Ojców, Chodecz (SZNABL, 1881), western Pomerania (KARL, 1935), Białowieża Forest (SACK, 1925), environs of Warszawa (TROJAN, 1953).

General distrib.: Cosmopolite species (does not appear in South Africa).

***S. tricinctus* (FALL. 1817).**

Tatra Mts.: 3 ♀♀ in M. NOWICKI's collection.

(Rd): Kościeliska Valley (950 m): 1 ♂, 22. VII. 1957; Hala Ornak pasture (1100 m): 1 ♂, 1. VIII. 1956; Lake Smreczyński (1226 m): 1 ♂, 9. VIII. 1956, leg. author.

(Rg): Mt. Żar (ca. 1540 m): 2 ♀♀, 18. VII. and 9. VIII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts., environs of Kraków (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925).

General distrib.: Europe, Japan.

***S. torvus* OST.-SACK. 1875.**

Tatra Mts.: 3 ♂♂ and 4 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (900 m): 1 ♀, 28. VII. 1953, *Hypericum perforatum* L., (1100 m): 1 ♂, 10. VII. 1953, *Hypericum* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950): 7 ♂♂ and 4 ♀♀, 14—19. VII. 1956; Hala Ornak pasture (ca 1000 m): ♀, 9. VIII. 1956, leg. author.

(Rg): Javorzynka Miętusia (ca 1290 m): 5 ♂♂, 22—28. VII. 1953, *Chaerophyllum hirsutum* L., leg. R. WOJTUSIAK; Mt. Łysanki (1447 m): 3 ♂♂ and 2 ♀♀, 14. VI. and 4. VII. 1957; Mt. Żar (1540 m): 2 ♂♂ and 6 ♀♀, 19. VII. and 9. VIII. 1956, leg. author.

(K): Żleb nad Kobylarzem (1765 m): 3 ♂♂, *Sempervivum soboliferum* SIMS, *Chaerophyllum hirsutum* L., 23—28. VII. 1953, leg. R. WOJTUSIAK.

Belanské Tatry: Košary, 2000 m (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts., Carpathians, former Austrian Galicia (NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935), Białowieża Forest (SACK, 1925), environs of Warszawa (TROJAN, 1953).

General distrib.: Holarctic.

***S. venustus* MEIG. 1822.**

Tatra Mts.: (Rg): Mt. Żar (1540 m): 1 ♀, 19. VII. 1956, leg. author.
Poland: eastern Sudety Mts. (CZIŻEK, 1909) environs of Kielce (TROJAN, 1953), western Pomerania (KARL, 1935), Tuchola Forest (RÜBSAAMEN, 1901). The species is new in the Tatra Mts.

General distrib.: Europe.

***S. vitripennis* MEIG. 1822.**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

(Rd): Kościeliska Valley (950 m): 3 ♀♀, 20. VII. and 14. VIII. 1956, *Hypericum perforatum* L.; Lake Smreczyński (1226 m): 2 ♀♀, 9. VIII. 1956, leg. author.

(Rg): Jaworzynka Miętusia (1290 m): 1 ♂ and 4 ♀♀, 24—28. VII. 1953, *Chaerophyllum hirsutum* L., *Gypsophila repens* L., *Aconitum callibotryon* RCHB., leg. R. WOJTUSIAK. Mt. Łysanki (1447 m): 1 ♀, 4. VII. 1957; Tomanowa Valley (ca 1500 m): 1 ♀, 9. VIII. 1956; 1 ♂ and 1 ♀, 19. VII. and 9. VIII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Przemyśl (BOBEK, 1894), western Pomerania (KARL, 1935), Karkonosze Mts. (VIMMER, 1908), eastern Sudety Mts. (CZIŻEK, 1909), environs of Warszawa (TROJAN, 1953), Tuchola (RÜBSAAMEN, 1901), Kalwaria (BOBEK, 1892).

General distrib.: Europe, Japan.

Gen. *Epistrophe* WALKER 1852***E. annulata* (ZETT. 1838).**

Tatra Mts.: (Rg): Mt. Żar (1540 m): 1 ♀, 9. VIII. 1956, leg. author.
Poland: The species is new in Poland.

General distrib.: Europe.

***E. auricollis* (MEIG. 1822).**

Tatra Mts.: 3 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (ca 1000 m): 1 ♂, 19. VIII. 1953, *Hypericum* sp., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Warszawa (SZNABL, 1881), western Pomerania (KARL, 1935), environs of Warszawa (TROJAN, 1953).

General distrib.: Europe, North Africa.

***E. balteata* (DEG. 1776).**

Tatra Mts.: 2 ♂♂ in M. NOWICKI's collection.

(Pog): Bukowina: 2 ♂♂, 20. VII. 1921, leg. I. KRÓL. Mt. Gubałówka (ca 1000 m): 5 ♂♂ and 4 ♀♀, 3. VII. — 11. VIII. 1953 and 1955, *Calluna vulgaris* SALISB., *Senecio* sp. *Bellis perennis* L., *Trifolium* sp., *Polygonum* sp., *Phyteuma orbiculare* L., *Epilobium* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♂, 20. VII. 1955, *Hypericum perforatum* L., leg. author.

(Rg): Jaworzynka Miętusia (ca 1270 m): 1 ♀, 17. VII. 1955, *Trifolium pratense* L., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts., Carpathians, former Austrian Galicia (NOWICKI, 1873), Tatra Mts.: „Gronik, Bystre“ (BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892), environs of Przemyśl (BOBEK, 1894), Warszawa, Skierniewice, Siedlce, Ojców, Chodecz, Ciechocinek (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), western Pomerania (KARL, 1935), Tuchola (RÜBSAAMEN, 1901), Białowieża Forest (SACK, 1925).

General distrib.: Cosmopolite species.

***E. barbifrons* (FALL. 1817).**

Tatra Mts.: quoted by BOBEK (1890): „below Uplaz ad Mts. Czerwone Wierchy, in dwarf pine shrubs“.

Poland: Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), western Pomerania (KARL, 1935).

General distrib.: in the mountains of central Europe; northern Europe.

***E. cinctella* (ZETT. 1843).**

Tatra Mts.: 2 ♂♂ and 4 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 1 ♀, 10. VIII. 1953, *Hypericum* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♂, 22. VII. 1956; Olczyska Valley (ca 1100 m): 1 ♂, 8. VII. 1957, *Campanula* sp., leg. author.
 (Rg): Ścieżka nad Reglami (ca 1300 m): 2 ♂♂, 11. VII. 1957; Sucha Woda Valley (Gąsienicowa) — (ca 1400 m): 1 ♀, 27. VI. 1957; Mt. Żar (1540 m): 1 ♀, 20. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), western Pomerania (KARL, 1935).

General distrib.: central and northern Europe. Siberia.

E. cincta (FALL. 1817).

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (NOWICKI, 1873), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935).

General distrib.: Europe.

E. lasiophthalma (ZETT. 1843).

Tatra Mts.: (Rd): Droga pod Reglami (ca 1000 m): 1 ♂, 11. VII. 1957, leg. author.

Poland: Carpathians (NOWICKI, 1873), western Pomerania (KARL, 1935). The species is new in the Tatra Mts.

General distrib.: central and northern Europe.

E. lineola (ZETT. 1843).

Tatra Mts.: 4 ♂♂ and 3 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 1 ♂, 10. VIII. 1953, *Hypericum* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♂ and 2 ♀♀, 23. VI. — 1.6 VII. and 27. VII. 1957; Strążyska Valley (1040 m): 2 ♀♀, 4—7. VII. 1957; Mała Łąka Valley (1209 m): 1 ♀, 7. VII. 1957, leg. author.
 (Rg): Jaworzynka Miętusia (1294 m): 1 ♀, 28. VII. 1953, *Gypsophila repens* L.; Sucha Woda Valley (Gąsienicowa) — (ca 1350 m): 1 ♂ and 2 ♀♀, 24—27. VI. 1957, leg. author. Wielka Świstówka (1350 m): 1 ♀, 26. VII. 1953, *Aconitum callibotryon* RCHB.; Mt. Kobylarz (1400 m): 1 ♂, 18. VII. 1953, *Pimpinella maior* HUDS., leg. R. WOJTUSIAK. Mt. Żar (1540 m): 1 ♀, 17. VII. 1956, leg. author.

(K): Valley of the Gąsienicowe Lakes (ca 1620 m): 1 ♂, 27. VI. 1957, leg. author. Żleb pod Kobylarzem (1765 m): 1 ♀, 18. VII. 1955, *Saxifraga*, sp., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935).

General distrib.: central and northern Europe.

***E. macularis* (ZETT. 1843).**

Tatra Mts.: 2 ♀♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), western Pomerania (KARL, 1935).

General distrib.: Europe, North America.

***E. vittigera* (ZETT. 1843).**

Tatra Mts.: (Pog): Mt. Gubałówka (1000 m): 1 ♀, 12. VIII. 1952, leg. R. WOJTUSIAK.

(Rg): Wielka Świstówka (1350 m): 1 ♀, 28. VII. 1951, *Potentilla Crantzi* BECK., leg. R. WOJTUSIAK. Sucha Woda Valley (Gąsienicowa (ca 1400 m): 1 ♀, 27. VI. 1957, leg. author.

(K): Pańszczyca Valley (1654 m): 1 ♀, 4. VII. 1957; Valley of the Gąsienicowe Lakes (1650 m): 1 ♂ and 1 ♀, 26–27. VI. 1957, leg. author.

Poland: Tatra Mts. (BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872), „environs of Sącz“ (NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), Tuchola (RÜBSAAMEN, 1901).

General distrib.: appears in central and northern Europe; rather common in the mountains.

***E. umbellatarum* (FABR. 1794).**

Tatra Mts.: 2 ♂♂ and 3 ♀♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; „by the road near Mt. Hruby Regiel“, BOBEK, 1890), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935).

General distrib.: Europe, northern Asia, North America.

Gen. *Eriozona* SCHINER 1860

E. syrphoides (FALL. 1817).

Tatra Mts.: 1 ♂ and 2 ♀♀ in M. NOWICKI's collection.

(Rd): Kościeliska Valley (ca 1000 m): 2 ♀♀, 16. VII. 1955, *Cirsium* sp., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935).

General distrib.: A species common in the mountains, it appears also in the lowlands. Central and northern Europe, Siberia. Also quoted from Roumania: Ceahlău, Zlatna (SUSTER, 1943, 1946b).

Gen. *Leucozona* SCHINER 1860

L. lucorum (L. 1758).

Tatra Mts.: 1 ♂ and 4 ♀♀ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♀, 23. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Mt. Gubałówka (1100 m): 1 ♀, 29. VII. 1952, *Umbelliferae*, leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 3 ♀♀, 16. VII. 1955, 17. VII. 1953, *Senecio Fuchsii* GMEL., *Valeriana tripteris* L., leg. R. WOJTUSIAK. Droga pod Reglami (950 m): 1 ♀, 18. VII. 1956; Strążyska Valley (1040 m): 3 ♀♀, 22. VI. 1957, 18. VII. 1956; Jaworzynka Miętusia (1187 m): 1 ♀, 25. VII. 1953, *Aconitum callibotryon* RCHB., leg. author.

(Rg): Mt. Kobylarz (1440 m): 1 ♀, 26. VII. 1953, *Aconitum callibotryon* RCHB.; Mt. Łysanki (1420 m): 1 ♂, 11. VI. 1957 (the second abdominal segment dull black, only on the sides there are narrow, yellow-brown blots. The remaining description corresponds to that of the typical form).

(K): Żleb nad Kobylarzem (1765 m): 1 ♂, 23. VII. 1956, *Semperi-vivum soboliferum* SIMS, leg. author. The specimen is melanistic: the second abdominal segment is black, there are narrow, yellow-brown blots only on the sides. The remaining description corresponds to that of the typical form.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; BOBEK, 1890), Białowieża Forest (SACK, 1925), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935).

General distrib.: Holarctic. Mountain species.

Gen. *Sphaerophoria* ST. FARGEAU & SERVIR 1825

S. menthastri (L. 1758).

Tatra Mts.: In M. NOWICKI's collection: 1 ♂ and 2 ♀♀ (var. *picla* MEIG.); 3 ♂♂ and 2 ♀♀ (var. *menthastri* L.); 1 ♂ and 2 ♀♀ (var. *taeniata* MEIG.).

(Pog): Mt. Gubałówka (900 m): 2 ♂♂ and 9 ♀♀, in July and August 1952 and 1954, *Calluna vulgaris* SALISB., *Chrysanthemum* sp., *Epilobium* sp., *Thymus* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 3 ♂♂ and 4 ♀♀, 6.—22. VII. 1956, leg. author.

(Rg): Mt. Żar (1540 m): 2 ♀♀, 18. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; „Jaszczurówka, Gronik, northern slope of Mt. Hruby Regiel“ BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), environs of Kraków (BOBEK, 1892), environs of Przemyśl (BOBEK, 1894), Sącz Valley (GRZEGORZEK, 1872), Warszawa, Skierniewice, Chodecz (SZNABL, 1881), western Pomerania (KARL, 1935), Białowieża Forest (SACK, 1925), environs of Warszawa (TROJAN, 1953), eastern Sudety Mts. (CZIŻEK, 1909).

General distrib.: Europe, Japan, North America.

S. rüppelli (WIED. 1830).

Tatra Mts.: Quoted by BOBEK (1890): „Gronik, in July“.

Poland: Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), Ciechocinek, Ojców, Chodecz (SZNABL, 1881), environs of Kraków (BOBEK, 1892).

General distrib.: Europe, northern Africa, Asia Minor.

S. scripta (L. 1858).

Tatra Mts.: 2 ♂♂ and 3 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (900 m): 36 ♂♂ and 70 ♀♀, July and August 1952—1954, *Epilobium* sp., *Calluna vulgaris* SALISB., *Thymus* sp., *Umbelliferae*, leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (ca 1000 m): 3 ♂♂ and 8 ♀♀, 30. VI. — 27. VIII. 1956 and 1957; Przysłop Miętusi (1187 m): 1 ♂, 7. VII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; „northern slope of Mt. Hruby Regiel“, BOBEK, 1890), Tatra Mts., Carpathians and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892), environs of Przemyśl (BOBEK, 1894),

western Pomerania (KARL, 1935), Białowieża Forest (SACK, 1925), Warszawa, Skierniewice, Siedlce, Chodecz, Ojców (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), eastern Sudety Mts. (CZIŻEK, 1909).

General distrib.: Holarctic.

Gen. *Xanthogramma* SCHINER 1860

X. ornatum (MEIG. 1822).

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

(Pog): Zakopane (ca 900 m): 1 ♀, 16. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Przemyśl (BOBEK, 1894), eastern Sudety Mts. (CZIŻEK, 1909), Tuchola (RÜBSAAMEN, 1901).

General distrib.: Europe. Quoted from the Alps (FRANZ, 1943) and the environs of Stalingrad (ZIMINA, 1954).

Gen. *Platychirus* ST. FARGEAU & SERVIR 1825

P. albimanus (FABR. 1781).

Tatra Mts.: 3 ♂♂ and 5 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (ca 1000 m): 3 ♂♂ and 3 ♀♀, 3. VII. — 2. VIII. 1954 and 1955, *Thymus* sp., *Campanula* sp., *Calluna vulgaris* SALISB., *Bellis perennis* L., leg. R. WOJTUSIAK.

(Rd): Kuźnice (ca 1000 m): 2 ♀♀, 6. VII. 1957; Hala Strążyska (1035 m): 1 ♀, 18. VII. 1956; Hala Ornak (1100 m): 1 ♀, 9. VIII. 1956).

(Rg): Mt. Żar (1540 m): 6 ♂♂ and 6 ♀♀, 18. VII. — 9. VIII. 1956, leg. author.

Vysoké Tatry: Štrbské pleso, 1200 m (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), western Pomerania (KARL, 1935), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), eastern Sudety Mts. (CZIŻEK, 1909).

General distrib.: Holarctic. Also known from the Philippine Isles.

***P. clypeatus* (MEIG. 1822).**

Tatra Mts.: 1 ♂ and 1 ♀ in M. NOWICKI's collection.

(Rd): Kościeliska Valley (950 m): 1 ♀, 18. VII. 1956; Strążyska Valley (1040 m): 1 ♀, 18. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), environs of Kraków (BOBEK, 1892) and Przemyśl (BOBEK, 1894), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935), Tuchola (RÜBSAAMEN, 1901), Warszawa, Skierniewice, Chodecz, Ojców, Ciecchocinek (SZNABL, 1881).

General distrib.: Europe, Siberia.

***P. manicatus* (MEIG. 1822).**

Tatra Mts.: 1 ♂ and 4 ♀♀ in M. NOWICKI's collection.

(Rg): Sucha Woda Valley (Gąsienicowa) — (ca 1350 m): 1 ♂, 27. VI. 1957, leg. author. Wielka Świstówka (1350 m): 1 ♂, 29. VII. 1951, *Thymus* sp., leg. R. WOJTUSIAK. Mt. Żar (1540 m): 1 ♀, 19. VII. 1956, leg. author.

Belanské Tatry: Košary, 2000 m (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; BOBEK, 1890), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935).

General distrib.: Common in the mountains in all Europe; also observed in the lowlands.

***P. melanopsis* LOEW 1856.**

Tatra Mts.: (Pog): Mt. Gubałówka (1100 m): 1 ♀, 3. VIII. 1951, *Thymus* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♀, 16. VII. 1957, leg. author. Wielka Świstówka (1350 m): 1 ♀, 29. VII. 1951, *Thymus* sp.; Sucha Woda Valley (Gąsienicowa) — (1400 m): 1 ♀, 26. VI. 1957; Valley of the Gąsienicowe Lakes (1670 m): 3 ♀♀, 26.—27. VI. 1957, leg. author.

Poland: Tatra Mts.: „Mts. Czerwone Wierchy“ (BOBEK, 1890).

General distrib.: In the mountains of central Europe. Rather rare in the lowlands. Known from the British Isles (COE, 1953). Quoted from the Alps (FRANZ, 1943).

***P. peltatus* (MEIG. 1822).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), environs of Warszawa (SZNABL, 1881; TROJAN, 1953), Tuchola (RÜBSAAMEN, 1901), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935).

General distrib.: Europe, North America.

***P. podagratus* (ZETT. 1838).**

Tatra Mts.: quoted by NOWICKI (1873). In M. NOWICKI's collection I found no specimen of this species from the Tatra Mts.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Skierniewice, Chodecz (SZNABL, 1881), western Pomerania (KARL, 1935).

General distrib.: central and northern Europe.

Gen. *Xanthandrus* VERRAL 1901***X. comtus* (HARRIS 1782).**

Tatra Mts.: (Rd): Przysłop Miętusi (1187 m): 1 ♂, 7. VII. 1957, *Senecio subalpinus* KOCH., leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and the south-eastern part of former Austrian Galicia (NOWICKI, 1873), environs of Warszawa (TROJAN, 1953), Silesia (PAX, 1921), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935).

General distrib.: Europe.

Gen. *Melanostoma* SCHINER 1860***M. ambiguum* (FALL. 1817).**

Tatra Mts.: (Rd): this species was quoted from the Tatra Mts. only by BOBEK (1890): „from Miętusia Valley“.

Poland: „Common in the Carpathians“ (KUNTZE & NOSKIEWICZ,

1938), Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), environs of Warszawa (TROJAN, 1953).

General distrib.: Europe, Groenland, Siberia.

***M. dubium* (ZETT. 1838).**

Tatra Mts.: The species was quoted from the Tatra Mts. only by BOBEK (1890): „Bystre, in August“.

Poland: Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), western Pomerania (KARL, 1935).

General distrib.: Known in all Europe.

***M. mellinum* (L. 1758).**

Tatra Mts.: 1 ♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♀, 26. VII. 1921, leg. Z. ZAĆWILICHOWSKA.

Mt. Gubałówka (900 m): 1 ♂, 3. VII. 1951, *Thymus* sp.

(Rd): Kuźnice (ca 1000 m): 1 ♀, 13. VII. 1951, leg. author.

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts., former Austrian Galicia, Carpathians (NOWICKI, 1873), Białowieża Forest (SACK, 1925), environs of Warszawa (TROJAN, 1953), Warszawa, Skierniewice, Siedlce, Ojców, Chodecz, Ciechocinek (SZNABL, 1881), Sącz Valley (GRZEGORZEK, 1909), western Pomerania (KARL, 1935), Tuchola (RÜBSAAMEN, 1901), environs of Kraków (BOBEK, 1892).

General distrib.: Cosmopolite species.

***M. scalare* (FABR. 1794).**

Tatra Mts.: (Rd): Kościeliska Valley (900 m): 2 ♀♀, 13. and 16. VII. 1956, leg. author. Strążyska Valley (1040 m): 1 ♂, 7. VII. 1920, leg. I. KRÓL.

Poland: Sącz Valley (GRZEGORZEK, 1872), former Austrian Galicia (NOWICKI, 1873), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935), environs of Warszawa (TROJAN, 1953), eastern Sudety Mts. (CZIŻEK, 1909). Not mentioned from the Tatra Mts. till now.

General distrib.: Widely distributed out of the Holartic.

Gen. *Baccha* FABRICIUS 1805***B. elongata* FABR. 1775.**

Tatra Mts.: Quoted by NOWICKI (1873).

Poland: Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Warszawa, Skierniewice (SZNABL, 1881), environs of Warszawa (TROJAN, 1953) and Przemyśl (BOBEK, 1894), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935).

General distrib.: Europe.

Gen. *Spathiogaster* RONDANI 1843***S. ambulans* (FABR. 1798).**

Tatra Mts.: (Rd): Kościeliska Valley (950 m): 1 ♀, 11. VII. 1957, leg. author.

Poland: Tatra Mts. (BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873).

General distrib.: In the mountains of all Europe.

***S. coarctata* (SCHUMM. 1836).**

Tatra Mts.: (Rd): Kościeliska Valley (950 m): 1 ♂, 11. VII. 1957, leg. author.

Poland: The species is new in Poland.

General distrib.: In the mountains of central Europe.

Subfam. *Chrysotoxinae***Gen. *Chrysotoxum* MEIGEN 1803*****Ch. arcuatum* (L. 1758).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (900 m): 1 ♀, 8. VIII. 1952, *Calluna vulgaris* SALISB., leg. R. WOJTUSIAK.

- (Rd): Kościeliska Valley (950 m): 1 ♂, 17. VII. 1956, Hala Ornak (1100 m): 1 ♀, 1. VIII. 1956, leg. author.
 (Rg): Mt. Żar (1540 m): 1 ♂, 16. VII. 1956, leg. author.
 Vysoké Tatry: Furkotská Valley, 1800 m (MOUCHA & ŠTYS, 1954).
 Poland: Tatra Mts. (LOEW, 1870; „northern slope of Mt. Hruby Regiel“, BOBEK, 1890), Tatra Mts. and „south-eastern Galicia“ (NOWICKI, 1873), western Pomerania (KARL, 1935), eastern Sudety Mts. (CZIŻEK, 1909).

General distrib.: Boreo-alpine species; appears in all Europe.

***Ch. bicinctum* (L. 1758).**

- Tatra Mts.: (Pog): Mt. Gubałówka (900 m): 1 ♂ and 1 ♀, 17. VII. 1952 and 11. VIII. 1953, *Veronica* sp., *Hypericum* sp., leg. R. WOJTUSIAK.
 (Rd): Kościeliska Valley (950 m): 1 ♂, 1. VII. 1956, leg. author.
 Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Warszawa (SZNABL, 1881; TROJAN, 1953) and Kraków (BOBEK, 1892), western Pomerania (KARL, 1935), eastern Sudety Mts. (CZIŻEK, 1909).

General distrib.: Europe, northern Asia, North America.
 Also quoted from Morocco (TIMON-DAVID, 1952).

***Ch. fasciolatum* (DEG. 1776).**

- Tatra Mts.: 2 ♂♂ and 1 ♀ in M. NOWICKI's collection.
 (Pog): Bukowina: 1 ♀, 13. VII. 1921, leg. Z. ZAĆWILICHOWSKA.
 (Rd): Kościeliska Valley (950 m): 1 ♀, 21. VII. 1957; Strążyska Valley (1040 m): 1 ♀, 4. VII. 1957; Mała Łąka Valley (1209 m): 1 ♀, 6. VII. 1957, leg. author.
 (Rg): Mt. Łysanki (1447 m): 1 ♀, 3. VII. 1957, leg. author.
 Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts., Carpathians (NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909).

General distrib.: In the mountains and lower mountain positions. Europe, northern Asia, Japan.

***Ch. festivum* (L. 1758).**

- Tatra Mts.: 3 ♂♂ in M. NOWICKI's collection.
 (Pog): Mt. Gubałówka (1100 m): 1 ♀, 26. VII. 1954, *Thymus* sp., leg. R. WOJTUSIAK.

(Rd): Strążyska Valley (1040 m): 12 ♂♂, 17—18. VII. 1956, leg. author.

(Rg): Mt. Grzybowiec (1416 m): 1 ♂, 10. VII. 1911, leg. I. KRÓL.
Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Warszawa, Ciechocinek (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), eastern Sudety Mts. (CZIŻEK, 1909).

General distrib.: Europe, Siberia, Japan. Quoted in the environs of Stalingrad (ZIMINA, 1954).

***Ch. vernale* LOEW 1841.**

Tatra Mts.: (Pog): Mt. Gubałówka (1100 m): 1 ♂, 9. VII. 1953, *Trifolium* sp., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (NOWICKI, 1873; BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872), Chodecz (SZNABL, 1881), environs of Przemyśl (BOBEK, 1894), western Pomerania (KARL, 1935).

General distrib.: Europe.

Subfam. *Chilosiniinae*

Gen. *Myolepta* NEWMAN 1838

***M. ruficornis* (ZETT. 1838).**

Tatra Mts.: 2 ♂♂ in M. NOWICKI's collection.

(Rg): Sucha Woda Valley (Gąsienicowa) — (1400 m): 1 ♀, 26. VI. 1957, leg. author.

Poland: Tatra Mts. (NOWICKI, 1873).

General distrib.: Europe, Siberia, Japan.

Gen. *Heringia* RONDANI 1856

***H. virens* (FABR. 1805).**

Tatra Mts.: (Pog): Mt. Gubałówka (900 m): 1 ♂, 18. VIII. 1951, *Thymus* sp., leg. R. WOJTUSIAK.

(Rd): Zakopane: 1 ♂, 15. VII. 1956, leg. author.

Poland: Tatra Mts. (NOWICKI, 1873; „below Mt. Łysanki, Gronik, in July“, BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872), Warszawa, Skierniewice, Siedlce, Chodecz, Ojców (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), western Pomerania (KARL, 1935), Białowieża Forest (SACK, 1925), Tuchola (RÜBSAAMEN, 1901).

General distrib.: Europe.

Gen. *Pipiza* FALLÉN 1810

P. bimaculata MEIG. 1822.

Tatra Mts.: Quoted by NOWICKI (1873).

Poland: Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), Tatra Mts. (LOEW, 1870).

General distrib.: Europe.

P. noctiluca (L. 1758).

Tatra Mts.: (Pog): Mt. Gubałówka (900 m): 1 ♀, 26. VI. 1954, leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♀, 22. VI. 1957, *Galium Schultesii* VEST.; Droga pod Reglami (950 m): 1 ♂, 23. VI. 1957; Mała Łąka Valley (1209 m): 1 ♀, 6. VII. 1957.

(Rg): Mt. Żar (1540 m): 1 ♀, 19. VII. 1956, leg. author.

Poland: Former Austrian Galicia (NOWICKI, 1873), environs of Warszawa (TROJAN, 1953), Silesia (SCHINER, 1854), Gdańsk district (ENDERLEIN, 1907), western Pomerania (KARL, 1935).

General distrib.: Europe.

P. quadrimaculata (PANZ. 1802).

Tatra Mts.: (Rd): Droga pod Reglami (ca 1000 m): 1 ♀, 23. VI. 1957, *Myosotis palustris* NATHORST; Roztoka Valley (1032 m): 1 ♂, 29. V. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; „clearing below Mt. Hruby Regiel“, BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872), western Pomerania (KARL, 1935).

General distrib.: Common in the mountains, rare in the lowlands. Appears in all Europe.

Gen. *Psilota* MEIGEN 1822***P. atra* (FALL. 1817).**

Tatra Mts.: (Rd): Kościeliska Valley (1000 m): 1 ♀, 27. VII. 1953, *Valeriana tripteris* L., leg. R. WOJTUSIAK.

Poland: Western Pomerania (KARL, 1935). The species is new for the Tatra Mts.

General distrib.: Europe.

Gen. *Chilosia* MEIGEN 1822***Ch. albitarsis* (MEIG. 1822).**

Tatra Mts.: 2 ♂♂ and 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), Silesia (BECKER, 1894; MALSKI, 1957), Warszawa, Chodecz (SZNABL, 1881), environs of Skierniewice (TROJAN, 1953) and Poznań (LOEW, 1840), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935).

General distrib.: Europe.

***Ch. antiqua* (MEIG. 1822).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; „Mts. Wierchy Bystrej“, BOBEK, 1890), Pieniny Mts. (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935).

General distrib.: Europe, Asia Minor.

***Ch. barbata* LOEW 1857.**

Tatra Mts.: 2 ♂♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♀, 19. VI. 1921, leg. I. KRÓL. Mt. Gubałówka (1100 m): 1 ♀, 27. VII. 1952, *Umbelliferae*, leg. R. WOJTUSIAK.
(Rd): Kościeliska Valley (950 m): 1 ♀, 24. VI. 1957, leg. author.
(Rg): Mt. Żar (1540 m): 2 ♀♀, 19. VII. and 10. VIII. 1956, *Parnassia palustris* L., leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and environs of Kraków (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Silesia

(BECKER, 1894; MALSKI, 1957), Skierniewice (SZNABL, 1881), environs of Warszawa (TROJAN, 1953).

General distrib.: Europe.

***Ch. bergenstammi* BECK. 1894.**

Tatra Mts.: (Rg): Mt. Żar (1540 m): 2 ♀♀, 19. VII. and 10. VIII. 1956, leg. author.

Poland: Silesia (BECKER, 1894; MALSKI, 1957), environs of Szczecin (KARL, 1935). The species is new in the Tatra Mts.

General distrib.: central and northern Europe.

***Ch. canicularis* (PANZ. 1801).**

Tatra Mts.: 2 ♂♂ and 1 ♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 1 ♀, 29. VII. 1956, *Compositae*, 1 ♂, 1. VIII. 1952, *Centaurea* sp., leg. R. WOJTUSIAK. Bukowina: 1 ♀, 26. VII. 1921, leg. Z. ZAĆWILICHOWSKA.

(Rd): Kościeliska Valley (950 m): 8 ♀♀, 16—27. VII. 1953, *Senecio nemorensis* L., *Senecio Fuchsii* GMEL., and other *Compositae*, *Hypericum* sp.; 11 ♂♂, July 1953, *Senecio nemorensis* L., *Senecio Fuchsii* GMEL., and other *Compositae*, leg. R. WOJTUSIAK. Strążyńska Valley (1040 m): 4 ♀♀, 18. VII. 1911, 1 ♂, 4. VII. 1911, leg. I. KRÓL. Mała Łąka Valley (1209 m): 9 ♀♀, 6. VII. 1957, leg. author.

(Rg): Mt. Grzybowiec (1416 m): 2 ♂♂, 6. VIII. 1956; Mt. Łysanki (1447 m): 2 ♂♂, 4. VII. 1957; Mt. Żar (1540 m): 42 ♀♀ and 9 ♂♂, in July and August 1956, *Gentiana asclepiadea* L., *Parnassia palustris* L., and others, leg. author.

(H): Quoted by NOWICKI (1867).

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts., former Austrian Galicia, Carpathians (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Silesia (BECKER, 1894), Karkonosze Mts. (MALSKI, 1957), eastern Sudety Mts. (CZIŻEK, 1909), environs of Poznań (LOEW, 1840), western Pomerania (KARL, 1935), Oliwa near Gdańsk (CZWAŁINA, 1893).

General distrib.: Mountain species, sometimes observed in the lowlands. Alps: Hohe Tauern, 1240—1600 m (FRANZ, 1943). It also inhabits central and southern Europe (SACK, 1932). Also quoted from Belgium (LECLERCQ, 1950).

***Ch. caerulescens* (MEIG. 1822).**

Tatra Mts.: (Rg): Jaworzynka Miętusia (1290 m): 1 ♀, 24. VII. 1956, leg. author.

Poland: Carpathians, environs of Kraków (NOWICKI, 1873). The species is new in the Tatra Mts.

General distrib.: Central Europe, Alps (BECKER, 1894; FRANZ, 1943).

***Ch. carbonaria* EGG. 1860.**

Tatra Mts.: Quoted by NOWICKI (1873) and by LOEW (1870).

Poland: Silesia (BECKER, 1894), Warszawa (SZNABL, 1881), western Pomerania (KARL, 1935).

General distrib.: Central and northern Europe (SACK, 1932).
Also quoted from Roumania (SUSTER, 1943).

***Ch. chloris* (MEIG. 1822).**

Tatra Mts.: Quoted by BOBEK (1890): „Mt. Murań, Mt. Giewont, end of July. Below Mt. Hruby Regiel. Near the stream Bystra in Zakopane“.

Poland: Environs of Kraków (NOWICKI, 1873), Kalwaria (BOBEK, 1890), Silesia (BECKER, 1894; MALSKI, 1957), western Pomerania (KARL, 1935).

General distrib.: Central and northern Europe (SACK, 1932).
Also quoted from Roumania (SUSTER, 1943).

***Ch. cynocephala* LOEW 1840.**

Tatra Mts.: (Rd): Kościeliska Valley (950 m), 1 ♂, 27. VII. 1953, *Senecio Fuchsii* GMEL., leg. R. WOJTUSIAK.

(Rg): Mt. Żar (1540 m): 1 ♀, 10. VIII. 1956, *Parnassia palustris* L., leg. author.

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Silesia (BECKER, 1894; MALSKI, 1957), environs of Warszawa (SZNABL, 1881) and Poznań (LOEW, 1840), western Pomerania (KARL, 1935).

General distrib.: Central and northern Europe.

***Ch. flavipes* (PANZ. 1798).**

Tatra Mts.: Quoted by NOWICKI (1873).

Poland: Silesia (BECKER, 1894; MALSKI, 1957).

General distrib.: Central and northern Europe (SACK, 1932), Spain and Morocco (KANERVO, 1941), Ural Mts. (HELLÉN, 1930).

***Ch. grossa* (FALL. 1817).**

Tatra Mts.: (Rd): Zakopane (ca 1000 m): 1 ♀, 15. V. 1956, leg. author.

Poland: Environs of Kraków (NOWICKI, 1873), Silesia (BECKER, 1894; MALSKI, 1957), western Pomerania (KARL, 1935). The species is new in the Tatra Mts.

General distrib.: Europe.

***Ch. illustrata* (HARR. 1782).**

Tatra Mts.: 4 ♂♂ and 3 ♀♀ in M. NOWICKI's collection.

(Pog): Bukowina: 2 ♂♂ and 1 ♀, 13—14. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Mt. Gubałówka (900 m): 6 ♂♂, July 1956, *Umbelliferae*, *Hypericum* sp.; 6 ♀♀, July 1953, *Umbelliferae*, leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♂, 27. VII. 1953, *Laserpitium latifolium* L., leg. R. WOJTUSIAK. Kuźnice (1023 m): 1 ♀, 24. VII. 1912, leg. I. KRÓL. Droga pod Regłami (ca 950 m): 1 ♂, 23. VI. 1957; Strążyska Valley (1040 m): 1 ♂ and 1 ♀, 4. VII. 1957 and 30. VI. 1956; Mt. Kończysta Turnia (1248 m): 1 ♂ and 1 ♀, 5. VIII. 1956, leg. author.

Poland: Tatra Mts. (NOWICKI, 1873; „northern slope of Mt. Hruby Regiel“, BOBEK, 1890), Sącz Valley and Pieniny Mts. (GRZEGORZEK, 1872), Carpathians (NOWICKI, 1873; KUNTZE & NOSKIEWICZ, 1938), Karkonosze Mts. (VIMMER, 1908), Silesia (BECKER, 1894; MALSKI, 1957), environs of Poznań (LOEW, 1840), Pomerania (CZWAŁINA, 1893; KARL, 1935).

General distrib.: A boreal-alpine element. Europe, central and northern Asia.

***Ch. impressa* LOEW 1840.**

Tatra Mts.: (Rg): Sucha Woda Valley (Gąsienicowa) — (ca 1400 m): 1 ♂, 27. VII. 1956, leg. author.

Poland: Tatra Mts. („northern slope of Mt. Hruby Regiel“, BOBEK,

1890), south-eastern part of former Austrian Galicia (NOWICKI, 1873), Silesia (BECKER, 1894; MALSKI, 1957), Warszawa, Skierniewice (SZNABL, 1881), Kampinos Forest (TROJAN, 1953), environs of Szczecin (KARL, 1935).

General distrib.: Europe (SACK, 1932). Kamtchatka (HELLEN, 1930).

***Ch. longula* (ZETT. 1838).**

Tatra Mts.: Quoted by NOWICKI (1873): „Tatra Mts., south-eastern (former Austrian) Galicia“.

Poland: Silesia (BECKER, 1894; MALSKI, 1957). Also known from Wielka Wieś on the Hel Peninsula (MALSKI, 1957).

General distrib.: Central and northern Europe, Siberia.

***Ch. montana* EGG.⁵ 1860.**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (NOWICKI, 1873), Karkonosze Mts. (VIMMER, 1908).

General distrib.: In the mountains of central Europe. Also known from Turkestan (SZILÁDY, 1938).

***Ch. morio* (ZETT. 1838).**

Tatra Mts.: Quoted by NOWICKI (1873).

Poland: Silesia (BECKER, 1894; MALSKI, 1957).

General distrib.: Europe.

***Ch. mutabilis* (FALL. 1817).**

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

(Pog): Bukowina: 2 ♂♂, 13. and 23. VII. 1921, leg. Z. ZAĆWILICHOWSKA.

(Rd): Białego Valley (ca 1200 m): 1 ♂, 9. VII. 1957, *Hieracium aurantiacum* L., leg. author.

Poland: Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), Silesia (BECKER, 1894; MALSKI, 1957), western Pomerania (KARL, 1935), Oliwa near Gdańsk (CZWAŁINA, 1893).

General distrib.: Europe, North Africa. Quoted from the environs of Stalingrad (ZIMINA, 1954).

***Ch. pagana* (MEIG. 1822).**

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

(Rd): Mała Łąka Valley (1173 m): 1 ♂, 15. VII. 1956, *Solidago virga-aurea* L., leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), environs of Kraków (NOWICKI, 1873; BOBEK, 1892), Silesia (BECKER, 1894; MALSKI, 1957), eastern Sudety Mts. (CZIŻEK, 1909), environs of Warszawa (TROJAN, 1953), Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia.

***Ch. pascuorum* BECK. 1894.**

Tatra Mts.: (Rd): Mała Łąka Valley (ca 1190 m): 1 ♀, 7. VII. 1956, leg. author.

Poland: Quoted by BECKER (1894) from former Austrian Galicia. The species is new in the Tatra Mts.

General distrib.: Central and northern Europe.

***Ch. personata* LOEW 1857.**

Tatra Mts.: (K): Pańszczyca Valley (ca 1600 m): 1 ♂, 20. VII. 1957, leg. author.

Poland: „Carpathians, south-eastern (former Austrian) Galicia, Podolia“ (NOWICKI, 1873), Silesia (BECKER, 1894), eastern Sudety Mts. (CZIŻEK, 1909), western Pomerania (KARL, 1935). The species is new in the Tatra Mts.

General distrib.: Central Europe.

***Ch. proxima* (ZETT. 1843).**

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

Poland: Tatra Mts., former Austrian Galicia (NOWICKI, 1873), Zakopane (BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), environs of Kraków (BOBEK, 1890), Chodecz, Skierniewice (SZNABL, 1881), Białowieża Forest (SACK, 1925), Silesia (BECKER, 1894; MALSKI, 1957), Oliwa near Gdańsk (CZWAŁINA, 1893).

General distrib.: A boreo-alpine species. Europe, northern Asia.

***Ch. pubera* (ZETT. 1838).**

Tatra Mts.: Quoted by NOWICKI (1873).

Poland: Tatra Mts. (LOEW, 1870), Białowieża Forest (SACK, 1925), western Pomerania (KARL, 1935).

General distrib.: Central and northern Europe. Also quoted from Roumania (SUSTER, 1943).

***Ch. rhynchops* EGG. 1860.**

Tatra Mts.: (Rd): Białego Valley (ca 1200 m): 1 ♀, 6. VII. 1956.

(K): Valley of the Gąsienicowe Lakes (1620 m): 1 ♂, 27. VI. 1957, *Epilobium montanum* L., leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872).

General distrib.: Central Europe.

***Ch. ruralis* (MEIG. 1822).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts., former Austrian Galicia (NOWICKI, 1873), Tatra Mts.: „clearing below Mt. Hruby Regiel“ (BOBEK, 1890), environs of Kraków (BOBEK, 1892) and Warszawa (TROJAN, 1953), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Silesia (BECKER, 1894; MAŁSKI, 1957), Białowieża Forest (SACK, 1925), Skierniewice, Chodecz (SZNABL, 1881), Tuchola (RÜBSAAMEN, 1901), western Pomerania (KARL, 1935).

General distrib.: Europe, northern Africa, northern Asia.

***Ch. sahlbergi* BECK. 1894.**

Tatra Mts.: (H): Kozia Valley: 1 ♂, „14. VII.“, leg. I. KRÓL.

Poland: The species is new in Poland.

General distrib.: A boreo-alpine species (HOLDHAUS, 1912).

Northern Europe (Finland: HELLÉN, 1929), in the mountains of central Europe: Alps (BECKER, 1894; FRANZ, 1943).

***Ch. scutellata* (FALL. 1817).**

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 1 ♀, 21. VII. 1952, *Chrysanthemum* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (1000 m): 1 ♂, 12. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892), eastern Sudety Mts. (CZIŻEK, 1909), Silesia (BECKER, 1894; MALSKI, 1957), Skierniewice, Ojców (SZNABL, 1881), environs of Warszawa (TROJAN, 1953). Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia, Asia Minor.

***Ch. soror* (ZETT. 1843).**

Tatra Mts.: Quoted by BOBEK (1890): „Gronik, VIII“.

Poland: Kalwaria (BOBEK, 1892), Ojców (SZNABL, 1881), Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), „south-eastern (former Austrian) Galicia“ (NOWICKI, 1873).

General distrib.: Central and northern Europe, Siberia; environs of Stalingrad (ZIMINA, 1954).

***Ch. variabilis* (PANZ. 1798).**

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

(Rd): Zakopane: 1 ♂, 14. VIII. 1956, leg. author. Kościeliska Valley (ca 950 m): 1 ♂, 27. VII. 1952, *Laserpitium latifolium* L., 1 ♀, 16. VII. 1953, *Valeriana tripteris* L., leg. R. WOJTUSIAK.

(Rg): Jaworzynka Miętusia (1290 m): 1 ♂, 24. VII. 1954, *Knautia Kitaibelii* BORB., leg. R. WOJTUSIAK.

(K): Valley of the Gąsienicowe Lakes (ca 1700 m): 1 ♂, 24. VII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Silesia (BECKER, 1894; MALSKI, 1957), environs of Poznań (LOEW, 1840), Oliwa near Gdańsk (CZWAŁINA, 1893), Western Pomerania (KARL, 1935).

General distrib.: Europe.

***Ch. vernalis* (FALL. 1817).**

Tatra Mts.: Quoted by BOBEK (1890): „northern slope of Mt. Hruby Regiel“.

Poland: former Austrian Galicia (NOWICKI, 1873), Silesia (BECKER, 1894; MALSKI, 1957), Sącz Valley (GRZEGORZEK, 1872), Western Pomerania (KARL, 1935).

General distrib.: Europe (SACK, 1932), Siberia (HELLÉN, 1930).

***Ch. vicina* (ZETT. 1849).**

Tatra Mts.: (Rg): Mt. Żar (1540 m): 1 ♀, 16. VIII. 1956, leg. author.
Poland: The species is new in Poland.

General distrib.: Northern and eastern Europe.

Gen. *Orthoneura* MACQUART 1828***O. nobilis* (FALL. 1817).**

Tatra Mts.: 1 ♂ and 2 ♀♀ in M. NOWICKI's collection.

(Rd): Zakopane: 1 ♀, 11. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Przemyśl (BOBEK, 1894), eastern Sudety Mts. (CZIŻEK, 1909, Western Pomerania (KARL, 1935).

General distrib.: Western Europe, northern and central part of European Part of the U. S. S. R., Archangelsk, Caucasus, mountains of central Asia (STACKELBERG, 1953).

Gen. *Liogaster* RONDANI 1857***L. metallina* (FABR. 1817).**

Tatra Mts.: 3 ♀♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Warszawa, Skierniewice,

Chodecz (SZNABL, 1881), environs of Warszawa (TROJAN, 1953),
Tuchola (RÜBSAAMEN, 1901), Western Pomerania (KARL, 1935).

General distrib.: Europe.

Gen. *Chrysogaster* MEIGEN 1800

***Ch. macquarti* LOEW 1843.**

Tatra Mts.: 2 ♀♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; „[Droga] pod Reglami from Mała Łąka Valley in the direction of Strążyska Valley“, BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley and Pieniny Mts. (GRZEGORZEK, 1872), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe.

***Ch. solstitialis* (FALL. 1817).**

Tatra Mts.: 1 ♂ and 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; „below Mt. Łysanki“, BOBEK, 1890), Tatra Mts., former Austrian Galicia, Carpathians (NOWICKI, 1873), Sącz Valley, Mt. Turbacz (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe; environs of Stalingrad (ZIMINA, 1954).

***Ch. viduata* (L. 1758).**

Tatra Mts.: 3 ♀♀ and 1 ♂ in M. NOWICKI's collection.

(Rd): Zakopane: 1 ♀, 20. VII. 1957; Mała Łąka Valley (1197 m): 1 ♀, 6. VIII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; „below Mt. Hruby Regiel, Gronik, Kościeliska Valley“, BOBEK, 1890), Tatra Mts., former Austrian Galicia (NOWICKI, 1873), Sącz Valley, Pieniny Mts. (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Skierniewice, Chodecz (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe. Also quoted from northern Africa: Morocco (KANERVO, 1941).

Subfam. *Sphegininae*Gen. *Neoascia* WILLISTON 1886*N. floralis* (MEIG. 1822).

Tatra Mts.: 2 ♀♀ in M. NOWICKI's collection.

(Rd): Zakopane: 1 ♀, 12. VIII. 1956, *Lychnis flos-cuculi* L., leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts., former Austrian Galicia (NOWICKI, 1873), Sącz Valley, Krościenko (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Silesia (SCHINER, 1862), Skierniewice, Chodecz (SZNABL, 1881), Kampinos Forest (TROJAN, 1953), Tuchola (RÜBSAAMEN, 1901), Western Pomerania (KARL, 1935).

General distrib.: Europe.

N. podagrica (FABR. 1775).

Tatra Mts.: 5 ♀♀ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♀, 26. VII. 1921, leg. I. KRÓL.

(Rd): Zakopane: 3 ♀♀, 12. and 14. VIII. 1956, *Epilobium montanum* L., leg. author.

Poland: Tatra Mts. („Gronik, July 16th; Bystre, August 22nd“, BOBEK, 1890; NOWICKI, 1873), former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), Skierniewice, Chodecz, Cieclocinek (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe, Madeira.

Gen. *Sphegina* MEIGEN 1822*S. clunipes* (FALL. 1816).

Tatra Mts.: 2 ♀♀ in M. NOWICKI's collection.

(Rd): Kościeliska Valley (950 m): 1 ♀, 5. VIII. 1956, *Chrysanthemum leucanthemum* L.; Strążyska Valley (1035 m): 1 ♀, 1. VI. 1957, leg. author.

Poland: Tatra Mts. („Gronik, August 8th“, Bobek, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Skierniewice (SZNABL, 1881), Western Pomerania (KARL, 1935).

General distrib.: Europe (SACK, 1932); European Part of the U. S. S. R., south-eastern district of Ussuri (STACKELBERG, 1953).

Subfam. *Brachyopinae*

Gen. *Rhingia* SCOPOLI 1763

R. campestris MEIG. 1822.

Tatra Mts.: (Rd): Kuźnice (ca 1000 m): 1 ♀, 21. VII. 1956, leg. author
 Olczyńska Valley (1000 m): 1 ♂, 8. VII. 1920, leg. I. KRÓL.
 (Rg): Mt. Łysanki (1447 m): 1 ♂, 10. VI. 1957, *Thymus alpestris* TAUSCH, leg. author.
 Poland: Tatra Mts. („clearing below Mt. Hruby Regiel“, BOBEK, 1890), former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Western Pomerania (KARL, 1935).

General distrib.: Europe.

R. rostrata (L. 1758).

Tatra Mts.: 2 ♂♂ and 4 ♀♀ in M. NOWICKI's collection.
 (Rg): Jaworzynka Miętusia (ca 1270 m): 2 ♀♀, 1. and 11. VII. 1957, *Epilobium montanum* L., *Thymus glabrescens* WILLD., leg. author.
 Poland: Tatra Mts. (LOEW, 1870; „Mts. Czerwone Wierchy, Gronik, in the first half of July“, BOBEK, 1890), Tatra Mts., former Austrian Galicia (NOWICKI, 1873), environs of Kraków (BOBEK, 1892), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), environs of Warszawa (SZNABL, 1881), Western Pomerania (KARL, 1935).

General distrib.: Europe.

Gen. *Brachyopa* MEIGEN 1822

B. conica (PANZ. 1798).

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.
 Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: In the mountains in all Europe; in the north also in the lowlands. Quoted from the Alps (FRANZ, 1943).

Subfam. *Volucellinae*

Gen. *Volucella* GEOFFROY 1764

V. bombylans L. (1758).

Tatra Mts.: 1 ♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♀, 26. VI. 1921, leg. Z. ZAĆWILICHOWSKA.

Mt. Gubałówka (900 m): 1 ♂, 12. VII. 1952, *Epilobium* sp.; (1100 m): 2 ♀♀, 21. VII. 1952, 29. VII. 1951, *Umbelliferae*, *Centaurea* sp., leg. R. WOJTUSIAK.

(Rd): Zakopane: 1 ♀, 9. VII. 1957; Kościeliska Valley (950 m): 2 ♂♂, 22. VII. 1956; Strążyska Valley (1040 m): 1 ♀, 30. VI. 1957, leg. author. Kalatówki (1200 m): 1 ♀, 8. VIII. 1955, leg. M. DRYLEWSKA.

(Rg): Jaworzynka Miętusia (1280 m): 1 ♂, 22. VII. 1953, *Trifolium incarnatum* L., leg. R. WOJTUSIAK. Za Bramką Valley (1300 m): 1 ♀, 3. VII. 1957; Mt. Żar (1540 m): 1 ♀, 18. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; „below Mt. Łysanki, northern slope of Mt. Hruby Regiel, in July“, BOBEK, 1890), Tatra Mts., Carpathians, former Austrian Galicia (NOWICKI, 1873), Sącz Valley, Pieniny Mts. (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892) and Przemyśl (BOBEK, 1894), Chodecz (SZNABL, 1881), Białowieża Forest (SACK, 1925), Tuchola (RÜBSAAMEN, 1901), Western Pomerania (KARL, 1935).

General distrib.: Northern Europe and central Asia.

V. inanis (L. 1758).

Tatra Mts.: (Rg): Mt. Żar (1540 m): 1 ♀, 9. VIII. 1956, leg. author.

Poland: Tatra Mts. („Gronik, July 8th“, BOBEK, 1890), Carpathians, former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Ojców (SZNABL, 1881).

General distrib.: In the mountains of all Europe. Rare in the lowlands.

***V. pellucens* (L. 1758).**

Tatra Mts.: 3 ♂♂ and 3 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1000 m): 1 ♂ and 1 ♀, 10. VII. 1952, 27. VIII. 1953, *Trifolium* sp., *Umbelliferae*, leg. R. WOJTUSIAK.

(Rd): Zakopane: 2 ♂♂ and 3 ♀♀, 1. VII. 1912, leg. I. KRÓL. Kościeliska Valley (950 m): 6 ♂♂ and 3 ♀♀, in June and July 1953—1957, *Senecio Fuchsii* GMEL. and others, leg. author.

(Rg): Jaworzynka Miętusia (1250 m): 2 ♀♀, 22. and 24. VII. 1953, *Knautia Kitaibelii* BORB., *Thymus* sp.; Wielka Świstówka (1350 m): 1 ♂, 13. VII. 1953, *Lotus corniculatus* L., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870; „northern slope of Mt. Hruby Regiel, Gronik“, BOBEK, 1890), Tatra Mts., Carpathians, former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Kalwaria (BOBEK, 1890), Ojców (SZNABL, 1881), environs of Przemyśl (BOBEK, 1894) and Częstochowa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Kampinos Forest (TROJAN, 1953), Tuchola (RÜBSAAMEN, 1901), Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia; environs of Stalingrad (ZIMINA, 1954).

***V. zonaria* (PODA 1764).**

Tatra Mts.: (Pog): Mt. Gubałówka (900 m): 1 ♀, 28. VII. 1953, *Hypericum perforatum* L., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts., Carpathians, former Austrian Galicia (NOWICKI, 1873), Stary Sącz (GRZEGORZEK, 1872), Western Pomerania (KARL, 1935).

General distrib.: Central and southern Europe, western and central Asia. Also quoted from the British Isles (KLOET & HINCKS, 1945).

Subfam. *Cinxiinae***Gen. *Arctophila* SCHINER 1860*****A. bombiformis* (FALL. 1810).**

Tatra Mts.: 1 ♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 1 ♂, 2. VIII. 1952, *Centaurea* sp., leg. R. WOJTUSIAK.

(Rd): Droga pod Reglami (ca 900 m): 3 ♂♂, 11. VII. 1957; Hala Strażyska (1040 m): 1 ♂, 14. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; „northern slope of Mt. Hruby Regiel“, BOBEK, 1890), eastern Sudety Mts. (PAX, 1921), environs of Kraków (BOBEK, 1892), Białowieża Forest (SACK, 1925).

General distrib.: Eastern Europe from southern Sweden and Finland to northern Italy, Caucasus, Typhlis; Black Sea region (STACKELBERG, 1927).

***A. muscitans* (FABR. 1781).**

Tatra Mts.: (Rg): Sucha Woda Valley (Gąsienicowa — ca 1400 m): 1 ♀, 27. VI. 1957, leg. author.

Poland: Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935). The species was not quoted from the Tatra Mts.

General distrib.: Europe (SACK, 1932). Also quoted from the European part of the U. S. R. R. (STACKELBERG, 1927).

Gen. *Cinxia* MEIGEN 1800

***C. borealis* (FALL. 1816).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 3 ♂♂ and 1 ♀, 10—11. VIII. 1953, 1—2. VIII. 1952, *Centaurea* sp., *Hypericum* sp., leg. R. WOJ-TUSIAK.

(Rd): Hala Ornak (1100 m): 1 ♀, 9. VIII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Carpathians (NOWICKI, 1873), Karkonosze Mts. (VIMMER, 1908), eastern Sudety Mts. (CZIŻEK, 1909), Skierniewice (SZNABL, 1881), Kampinos Forest (TROJAN, 1953), Tuchola (RÜBSAAMEN, 1901), Gdańsk district (ENDERLEIN, 1907), Western Pomerania (KARL, 1935).

General distrib.: Common in the mountains, rare in the lowlands. Europe, Japan, North America (SACK, 1932). Also quoted from the Caucasus and the European Part of the U. S. S. R. (STACKELBERG, 1927).

***C. lappona* (L. 1758).**

Tatra Mts.: 5 ♂♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 2 ♀♀ and 1 ♂, 9. VII. 1953, 22. VII. 1954, 12. VII. 1955, *Trifolium* sp., *Polygonum* sp., *Campanula* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 3 ♂♂ and 6 ♀♀, 7. VII. — 14. VIII. 1956 and 1957; Hala Ornak (1100 m): 1 ♀, 9. VIII. 1956; Strążyska Valley (1040 m): 1 ♂, 18. VII. 1956, leg. author.

(Rg): Sucha Woda Valley (Gąsienicowa — 1400 m): 1 ♀, 26. VII. 1957; Mt. Żar (1540 m): 1 ♀, 18. VII. 1956, leg. author.

(K): Valley of the Gąsienicowe Lakes (ca 1600 m): 1 ♀, 26. VII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; „Bystre“, BOBEK, 1890), Sącz Valley (GRZEGORZEK, 1872), Karkonosze Mts. (VIMMER, 1908), eastern Sudety Mts. (PAX, 1921), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia, North America.

Subfam. *Eristalinae***Gen. *Eristalis* LATREILLE 1804*****E. alpina* (PANZ. 1798).**

Tatra Mts.: 3 ♀♀ in M. NOWICKI's collection.

(Rd): Przysłop Miętusi (1187 m): 1 ♀, 7. VII. 1957, *Phyteuma orbiculare* L., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870; „Mt. Murań, northern slope of Mt. Hruby Regiel“, BOBEK, 1890), Tatra Mts., Carpathians (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (PAX, 1921), Białowieża Forest (SACK, 1925), Chodecz (SZNABL, 1881), Western Pomerania (KARL, 1935).

General distrib.: In the mountains of central Europe. Rare in the lowlands.

***E. arbustorum* (L. 1758).**

Tatra Mts.: 2 ♂♂ in M. NOWICKI's collection.

(Pog): Bukowina: 3 ♂♂, 13—26. VII. 1921, leg. Z. ZAĆWILI-CHOWSKA. Mt. Gubałówka (ca 1000 m): 2 ♂♂ and 5 ♀♀, in July and August 1952—1954, *Calluna vulgaris* SALISB., *Chrysanth-*

num sp., *Thymus* sp., *Centaurea* sp., *Hypericum* sp., *Umbelliferae*, leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (1000 m): 2 ♂♂ and 4 ♀♀ in July and August 1953 and 1957, *Senecio nemorensis* L., *Hypericum perforatum* L., leg. R. WOJTUSIAK and the author.

(Rg): Kraków Ravine (ca 1300 m): 1 ♀, 16. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; „Kościeliska Valley, below Mt. Łysanki, in July, [Droga] pod Reglami in Strążyska Valley“, BOBEK, 1890), Tatra Mts., Carpathians (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892) and Przemyśl (BOBEK, 1894), eastern Sudety Mts. (CZIŻEK, 1909), Warszawa, Skierniewice, Chodecz, Ciechocinek (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Tuchola (RÜBSAAMEN, 1901), Western Pomerania (KARL, 1935).

General distrib.: Palearctic.

E. horticola (DEGEER 1776).

Tatra Mts.: 3 ♂♂ and 1 ♀ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♂ and 1 ♀, 13. and 19. VII. 1921, leg. I. KRÓL. Mt. Gubałówka (900 m): 1 ♀, 7. VIII. 1951, *Thymus* sp., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts., former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), Białowieża Forest (SACK, 1925), environs of Warszawa, Skierniewice, Chodecz (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Tuchola (RÜBSAAMEN, 1901), Western Pomerania (KARL, 1935).

General distrib.: Europe, North Africa, Siberia.

E. intricata (L. 1758).

Tatra Mts.: 2 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (1100 m): 1 ♂, 26. VII. 1956, *Thymus* sp., leg. R. WOJTUSIAK.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts., former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1890), Warszawa, Skierniewice, Siedlce, Chodecz (SZNABL, 1881), Kampinos Forest, environs of Warszawa (TROJAN, 1953), environs of Poznań (SCHINER, 1854), Tuchola (RÜBSAAMEN, 1901), Western Pomerania (KARL, 1935).

General distrib.: Europe. Quoted from the environs of Stalingrad (ZIMINA, 1954).

***E. jugorum* EGGER 1858.**

Tatra Mts.: (Pog): Bukowina: 2 ♀♀, 18. VII. 1921, leg. I. KRÓL. Mt. Gubałówka (1100 m): 1 ♂ and 1 ♀, 3. VIII. 1951, 18. VIII. 1955, *Thymus* sp., *Polygonum* sp., leg. R. WOJTUSIAK.
 (Rd): Przysłop Miętusi (1187 m): 1 ♂, 7. VII. 1957, leg. author.
 (Rg): Jaworzynka Miętusia (1250 m): 1 ♂ and 1 ♀, 22—24. VII. 1953, *Knautia Kitaibelii* BORB., leg. R. WOJTUSIAK.
 Poland: Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873). The species is new in the Tatra Mts.

General distrib.: In the mountains of all Europe.

***E. nemorum* (L. 1758).**

Tatra Mts.: 1 ♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): Bukowina: 6 ♂♂, 28. V. — 23. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Mt. Gubałówka (900 m): 1 ♂ and 2 ♀♀, 10. VII. 1953, 22. and 31. VII. 1952, *Thymus* sp., *Centaurea* sp., *Chrysanthemum* sp.; (1100 m): 3 ♀♀, 21. and 22. VII., 1. VIII. 1952, *Umbelliferae*, *Chrysanthemum* sp., leg. R. WOJTUSIAK.

(Rd): Droga pod Regłami (900 m): 1 ♀, 23. VI. 1957; Kościeliska Valley (950 m): 8 ♂♂, in July 1953 and 1957, *Valeriana tripteris* L., *Senecio Fuchsii* GMEL., *Senecio nemorensis* L.; Przysłop Miętusi (1138 m): 1 ♂, 7. VII. 1957, leg. author.

(Rg): Jaworzynka Miętusia (1250 m): 1 ♀, *Knautia Kitaibelii* BORB., 24. VII. 1953, leg. R. WOJTUSIAK.

Vysoké Tatry: Popradské pleso, 1500 m (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts., Carpathians, former Austrian Galicia (NOWICKI, 1873), Tatra Mts. („Mała Łąka Valley and northern slope of Mt. Hruby Regiel“, BOBEK, 1890), Kalwaria (BOBEK, 1890), environs of Przemyśl (BOBEK, 1894), Sącz Valley (GRZEGORZEK, 1872), Warszawa, Skierniewice (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia.

***E. pertinax* (SCOP. 1763).**

Tatra Mts.: 3 ♂♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♂ and 1 ♀, 13. and 26. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Mt. Gubałówka (ca 1000 m): 4 ♂♂ and 11 ♀♀, in July and August 1951—1955, *Hypericum* sp., *Polygonum* sp., *Thymus* sp., *Umbelliferae*, leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (ca 1000 m): 3 ♂♂ and 1 ♀, 16—27. VII. 1953, *Valeriana tripteris* L., *Senecio nemorensis* L., *Senecio Fuchsii* GMEL., leg. R. WOJTUSIAK. Hala Strążyska (1040 m): 1 ♂ and 1 ♀, 13. VII. 1957, leg. author.

(Rg): Jaworzynka Miętusia (1294 m): 1 ♂, 24. VII. 1953, *Knautia Kataibellii* BORB. Wielka Świstówka (1300 m): 1 ♂, 18. VII. 1952, *Dianthus praecox* W. K., leg. R. WOJTUSIAK. Mt. Żar (1540 m): 1 ♂, 15. VII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; „Gronik, northern slope of Mt. Hruby Regiel“, BOBEK, 1890), Tatra Mts., Carpathians, former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Chodecz (SZNABL, 1881), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe. Quoted from the environs of Stalingrad (ZIMINA, 1954).

E. pratorum (MEIG. 1822).

Tatra Mts.: (Pog): Mt. Gubałówka (1100 m): 1 ♂, 18. VII. 1952, *Chrysanthemum* sp., leg. R. WOJTUSIAK.

(Rd): Przysłop Miętusi (1187 m): 1 ♀, 7. VII. 1957, leg. author. Belanské Tatry: Kościary, 2000 m (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; „Gronik“, BOBEK, 1890), Warszawa, Chodecz (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Gdańsk district (ENDERLEIN, 1907), Western Pomerania (KARL, 1935).

General distrib.: Southern and central Europe.

E. rupium FABR. 1805.

Tatra Mts.: 2 ♂♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): 2 ♂♂ and 1 ♀, 18., 23., 26. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Mt. Gubałówka (ca 1000 m): 7 ♂♂ and 4 ♀♀, in July and August 1951—1955, *Senecio Fuchsii* GMEL., *Campanula* sp., *Umbelliferae*, *Thymus* sp., *Polygonum* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♂ and 11 ♀♀, 16. VII. — 8. VIII. 1953 and 17—27. VII. 1956, *Senecio nemorensis* L., *Senecio Fuchsii* GMEL., and others, leg. R. WOJTUSIAK and the author. Droga pod Reglami (1000 m): 1 ♂ and 3 ♀♀, 23—24. VI. 1957, leg. author. Strążyska Valley (1040 m): 3 ♂♂, 23. VI. — 7. VII. 1957, leg. author; 3 ♀♀, 7. VII. 1920, leg. I. KRÓL. Przysłop Miętusi (1138 m): 2 ♀♀, 7. VII. 1957; Mała Łąka Valley (1209 m): 3 ♂♂ and 3 ♀♀, 6. VII. 1957, leg. author.

(Rg): Jaworzynka Miętusia (1290 m): 1 ♂, 28. VII. 1953, *Knautia*

Kitaibelii BORB., leg. R. WOJTUSIAK. Mt. Żar (1540 m): 2 ♂♂ and 3 ♀♀, 16. VII. — 9. VIII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), Silesia (SCHINER, 1854), eastern Sudety Mts. (CZIŻEK, 1909), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Tuchola (RÜBSAAMEN, 1901), former East Prussia (HAGEN, 1849), Western Pomerania (KARL, 1935).

General distrib.: Common in the mountains of all Europe; rare in the lowlands.

Gen. *Eristalomyia* RONDANI 1857

E. cryptarum (FABR. 1794).

Tatra Mts.: 3 ♂♂ in M. NOWICKI's collection.

Poland: Tatra Mts. (NOWICKI, 1873), Kampinos Forest (TROJAN, 1953), Western Pomerania (KARL, 1935).

General distrib.: In the mountains of central Europe (Alps: FRANZ, 1943). Northern Europe.

E. tenax (L. 1758).

Tatra Mts.: 3 ♂♂ and 1 ♀ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♀, 19. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Mt. Gubałowska (ca 1000 m): 3 ♂♂ and 4 ♀♀, in July and August 1952—1955, *Umbelliferae*, *Carlina acaulis* L., *Calluna vulgaris* SALISB., *Hypericum* sp., *Chrysanthemum* sp., *Cerastium* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (ca 1000 m): 1 ♂ and 2 ♀♀, 17—27. VII. 1953, *Senecio nemorensis* L., *Senecio Fuchsii* GMEL.; Hala Strążyńska (1040 m): 2 ♂♂, 9. VIII. 1956; Mała Łąka Valley (1209 m): 1 ♂, 6. VII. 1957; Hala Smreczyńska (1230 m): 1 ♂ and 1 ♀, 8. VIII. 1956, leg. author.

(Rg): Wielka Świstówka (1350 m): 1 ♀, 25. VII. 1953, *Trifolium* sp.; Sucha Woda Valley (Gąsienicowa — 1400 m): 1 ♂, 27. VI. 1957; Mt. Żar (1540 m): 1 ♂ and 1 ♀, 10. VII. and 9. VIII. 1956, leg. author.

(K): Żleb nad Kobylarzem (1780 m): 2 ♂♂ and 2 ♀♀, 12. VII. 1953 and 23—29. VII. 1951, *Thymus* sp., *Parnassia palustris* L., leg. author.

(H): Quoted by NOWICKI (1867).

(T): Quoted by NOWICKI (1867).

Belanské Tatry: Ždiarska vidla, 2148 m (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts. (LOEW, 1870; BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), environs of Kraków (BOBEK, 1892) and Przemyśl (BOBEK, 1894), Sącz Valley (GRZEGORZEK, 1872), Warszawa, Skierniewice, Siedlce, Chodecz, Ojców (SZNABL, 1881), Western Pomerania (KARL, 1935).

General distrib.: Cosmopolite species.

Gen. *Myiatropa* RONDANI 1844

M. florea (L. 1758).

Tatra Mts.: 3 ♂♂ and 1 ♀ in M. NOWICKI's collection.

(Pog): 19 ♂♂ and 4 ♀♀, 24—29. VII. 1953, *Hypericum perforatum* L., *Umbelliferae*, leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (ca 1000 m): 5 ♂♂ and 5 ♀♀, 30. VI. — 14. VIII. 1957, leg. author.

(Rg): Mt. Żar (1540 m): 2 ♀♀, 9. VIII. 1956, leg. author.

(K): Pańszczyca Valley (1650 m): 1 ♀, 4. VII. 1957, leg. author. Belanské Tatry: caught at 1900 m altitude as highest (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts. (LOEW, 1870; „Mt. Koziniec, Mt. Hruby Regiel, Bystre, Gronik, below Uplaz (pasture) on Mts. Czerwone Wierchy“, BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892) and Przemyśl (BOBEK, 1894), eastern Sudety Mts. (CZIŻEK, 1909), Warszawa, Skierniewice, Chodecz, Ojców (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe, North Africa.

Gen. *Tubifera* MEIGEN 1800

T. pendula (L. 1758).

Tatra Mts.: (Pog): Bukowina: 1 ♀, 26. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Mt. Gubałówka (1100 m): 1 ♀, 13. VII. 1953, *Senecio Fuchsii* GMEL., leg. R. WOJTUSIAK.

(Rd): Zakopane (900 m): 1 ♀, 5. VIII. 1956; Kościeliska Valley (950 m): 2 ♀♀, 26. VII. 1954 and 9. VIII. 1956, leg. R. WOJTUSIAK and the author. Strążyska Valley (1040 m): 1 ♀, 1. VII. 1957, leg. author.

Poland: Nowy Sącz (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892) and Przemyśl (BOBEK, 1894), Warszawa, Skierniewice

(SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Tuchola (RÜBSAAMEN, 1901), Western Pomerania (KARL, 1935). The species is new in the Tatra Mts.

General distrib.: Europe.

***T. trivittata* (FABR. 1775).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; „northern slope of Mt. Hruby Regiel“, BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892) and Przemyśl (BOBEK, 1894), eastern Sudety Mts. (CZIŻEK, 1909), Warszawa, Chodecz (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925) Western Pomerania (KARL, 1935).

General distrib.: Europe.

Gen. *Lampetia* MEIGEN 1800

***L. aenea* (MEIG. 1822).**

Tatra Mts.: Quoted by M. NOWICKI.

Poland: „Tatra Mts.“; „var. *aurea* FABR.: Carpathians, northern Bukowina (Moldavia), Podolia“ (NOWICKI, 1873), Chodecz (SZNABL, 1881).

General distrib.: Central and southern Europe, Asia Minor, North Africa.

Subfam. *Milesiinae*

Gen. *Penthesilea* MEIGEN 1800

***P. asilica* (FALL. 1816).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia, Japan (SACK, 1932).

Quoted from the European part of the U. S. S. R. (STACKELBERG, 1955).

***P. berberina* (FABR. 1805).**

Tatra Mts.: (Rd): Zakopane: 1 ♂, 1. VII. 1957; Kościeliska Valley (950 m): 1 ♀, 18. VII. 1956, leg. author. Waterfall Wodogrzmoty Mickiewicza (1100 m): 1 ♀, 18. VI. 1956, *Lonicera* sp., leg. M. DY-LEWSKA.

(Rg): Jaworzynka Miętusia (1250 m): 1 ♀, 11. VII. 1957, leg. author.

Poland: Western Pomerania (KARL, 1935), eastern Sudety Mts. (CZIŻEK, 1909). Not mentioned from the Tatra Mts.

General distrib.: Europe. Mentioned from the Alps (FRANZ, 1943) and the Caucasus (STACKELBERG, 1955).

***P. oxyacanthae* (MEIG. 1822).**

Tatra Mts.: (Rd): Kościeliska Valley (950 m): 1 ♂, 18. VII. 1956, leg. author.

(Rg): Jaworzynka Miętusia (1250 m): 1 ♂, 18. VII. 1956, *Senecio subalpinus* KOCH, leg. author.

Poland: Western Pomerania (KARL, 1935). Not mentioned from the Tatra Mts.

General distrib.: Caucasus, central and southern Europe (STACKELBERG, 1955).

Gen. *Temnostoma* ST. FARGEAU & SERVIR 1825***T. bombylans* (FABR. 1805).**

Tatra Mts.: 1 ♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873), Białowieża Forest (SACK, 1925), environs of Szczecin (KARL, 1935).

General distrib.: Europe, Siberia, Japan, North America.

Gen. *Syritta* ST. FARGEAU & SERVIR 1825***S. pipiens* (L. 1758).**

Tatra Mts.: 3 ♂♂ and 2 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (900 m): 4 ♂♂ and 2 ♀♀, in July and August 1951—1952, *Chrysanthemum* sp., *Calluna vulgaris* SALISB., *Vernonia* sp., *Thymus* sp., *Umbelliferae*, leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♂, 8. VIII. 1956, *Veronica* sp., leg. author.

Poland: Tatra Mts. (LOEW, 1870; „Gronik, Bystre“, (BOBEK, 1890), Tatra Mts., Carpathians, former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), environs of Kraków (BOBEK, 1892) and Przemyśl (BOBEK, 1894), eastern Sudety Mts. (CZIŻEK, 1909), Warszawa, Skierniewice, Chodecz, Ciechocinek (SZNABL, 1881), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Holarctic.

Gen. *Cynorrhina* WILLISTON 1886

C. fallax (L. 1758).

Tatra Mts.: 5 ♂♂ and 4 ♀♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (900 m): 1 ♂ and 1 ♀, 14. VII. 1952, *Senecio* sp., leg. R. WOJTUSIAK.

(Rd): Zakopane: 3 ♂♂ and 1 ♀, 1. VII. 1957, leg. author. Kościeliska Valley (950 m): 1 ♂, 17. VII. 1953, *Valeriana tripteris* L., leg. R. WOJTUSIAK. Białego Valley (ca 1000 m): 4 ♂♂, 1. VII. 1956 and 11. VII. 1957, leg. author.

(Rg): Sucha Woda Valley (Gąsienicowa — 1400 m): 1 ♂, 26. VI. 1957; Mt. Żar (1540 m): 1 ♂ and 1 ♀, 15. VII. 1956, *Parnassia palustris* L., leg. author.

Vysoké Tatry: Štrbské pleso, 1200 m (MOUCHA & ŠTYS, 1954).

Poland: Tatra Mts. (LOEW, 1870; NOWICKI, 1873; „Gronik“, BOBEK, 1890), environs of Kielce (TROJAN, 1953) and Warszawa (SZNABL, 1881), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia, Japan.

Gen. *Brachypalpus* MACQUART 1830

B. bimaculatus (MACQ. 1828).

Tatra Mts.: In M. NOWICKI's collection 1 ♂ and 1 ♀ caught in the Tatra Mts. (♀ in June) and determined as *B. angustatus* EGGER.

Poland: Western Pomerania (KARL, 1935).

General distrib.: Europe.

***B. chrysites* EGGER 1859.**

Tatra Mts.: (Rd): Kościeliska Valley (950 m): 1 ♂ and 1 ♀, 8. and 22. V. 1956, *Crocus* sp., leg. M. DYLEWSKA.

Poland: Kampinos Forest (TROJAN, 1953). The species is new in the Tatra Mts.

General distrib.: Central Europe.

Gen. *Zelima* MEIGEN 1800***Z. abiens* (MEIG. 1822).**

Tatra Mts.: Quoted by BOBEK (1890): „northern slope of Mt. Hruby Regiel, July 25th“.

Poland: Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), Skierniewice (SZNABL, 1881), Białowieża Forest (SACK, 1925).

General distrib.: Central and southern Europe. Also known from Belgium (LECLERCQ, 1950) and the British Isles (COE, 1953).

***Z. femorata* (L. 1758).**

Tatra Mts.: 3 ♂♂ and 1 ♀ in M. NOWICKI's collection.

(Pog): Mt. Gubałówka (900 m): 1 ♂, 7. VII. 1954, *Campanula* sp., leg. R. WOJTUSIAK.

(Rd): Kościeliska Valley (950 m): 1 ♀, 12. VII. 1957, *Hypericum maculatum* Cr., leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Ojców (SZNABL, 1881), Pieniny Mts. (GRZEGORZEK, 1872), Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia, China.

***Z. florum* (FABR. 1805).**

Tatra Mts.: In M. NOWICKI's collection 1 ♂ determined as *Z. nemorum* F.

(Rd): Kościeliska Valley (ca 900 m): 1 ♂ and 1 ♀, 26. VI. 1957 and 18. VII. 1956; Droga pod Regłami (1000 m): 1 ♂, 22. VI. 1957, leg. author. Olczyńska Valley (1000 m): 1 ♂, 8. VII. 1920, leg. I. KRÓL.

(Rg): Jaworzynka Mietusia (ca 1250 m): 1 ♂, 23. VI. 1957; Mt. Żar (1540 m): 1 ♂, 10. VIII. 1956, leg. author.

Poland: Tatra Mts. („northern slope of Mt. Hruby Regiel“, BOBEK, 1890), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe.

***Z. lenta* (MEIG. 1822).**

Tatra Mts.: 3 ♀♀ in M. NOWICKI's collection.

Poland: Tatra Mts. (LOEW, 1870; „Kraków Ravine“, 9. VIII., BOBEK, 1890), Tatra Mts., environs of Kraków (NOWICKI, 1873), Stary Sącz (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), Western Pomerania (KARL, 1935).

General distrib.: Europe.

***Z. segnis* (L. 1758).**

Tatra Mts.: 1 ♂ in M. NOWICKI's collection.

(Pog): Bukowina: 1 ♀, 23. VII. 1921, leg. Z. ZAĆWILICHOWSKA. Mt. Gubałówka (ca 1000 m): 2 ♂♂, 31. VII. 1951 and 5. VIII. 1952, *Epilobium* sp., leg. R. WOJTUSIAK.

(Rd): Zakopane: 1 ♂, 15. VI. 1956; Kościeliska Valley (1000 m): 4 ♂♂, 30. VI. — 10. VIII. 1956—1957; Kuźnice (1000 m): 1 ♀, 23. VI. 1957, leg. author.

(Rg): Sucha Woda Valley (Gąsienicowa — ca 1400 m): 1 ♂, 23. VII. 1957, leg. author.

Poland: Tatra Mts. (LOEW, 1870; „northern slope of Mt. Hruby Regiel“, BOBEK, 1890), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern Sudety Mts. (CZIŻEK, 1909), environs of Warszawa (TROJAN, 1953), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe; North Africa: Morocco (TIMON-DAVID, 1952).

***Z. sylvarum* (L. 1758).**

Tatra Mts.: 3 ♂♂ and 2 ♀♀ in M. NOWICKI's collection.

(Rd): Hala Strażyńska (1040 m): 1 ♀, *Thymus* sp., 7. VIII. 1956, leg. author.

Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Sącz Valley (GRZEGORZEK, 1872), eastern

Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe. Known from the environs of Stalingrad (ZIMINA, 1954).

Subfam. *Pelecerinae*

Gen. *Chamaesyrphus* MÜK 1895

Ch. scaevoides (FALL. 1817).

Tatra Mts.: (Rg): Wielka Świstówka (1350 m): 2 ♀♀, 23. and 29. VII. 1951, *Myosotis* sp., *Cerastium latifolium* L., leg. R. WOJTUSIAK.
Poland: Sącz Valley (GRZEGORZEK, 1872; NOWICKI, 1873), environs of Warszawa (TROJAN, 1953), Western Pomerania (KARL, 1935). The species is new in the Tatra Mts.

General distrib.: Xerophile species. Appears in all Europe.

Subfam. *Microdentinae*

Gen. *Microdon* MEIGEN 1803

M. devius (L. 1761).

Tatra Mts.: 3 ♀♀ in M. NOWICKI's collection.
Poland: Former Austrian Galicia (NOWICKI, 1873), Ojców (SZNABL, 1881), eastern Sudety Mts. (CZIŻEK, 1909), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935). The species is new in the Tatra Mts.

General distrib.: Europe.

M. mutabilis (L. 1758).

Tatra Mts.: 2 ♀♀ in M. NOWICKI's collection.
Poland: Tatra Mts. (LOEW, 1870), Tatra Mts. and former Austrian Galicia (NOWICKI, 1873), Białowieża Forest (SACK, 1925), Western Pomerania (KARL, 1935).

General distrib.: Europe, Siberia.

ZOOGEOGRAPHICAL CHARACTERISTIC

General remarks.

In his detailed list of species the author catalogues 144 species of *Diptera* from the family *Syrphidae*. The material collected by the author probably does not comprise all the Syrphids in the described area. Similarly, a strict classification of some species into separate types of geographical distribution is not always possible owing to a lack of comparative data from some areas. These materials, however, allow a preliminary characteristic of the chief elements of the separate types of geographical distribution and the listing of generalised percentages which characterise — in the sense of the Syrphid fauna — the position of the Tatra Mts. in the zoogeography of the Palaearctic.

An important part on the system of faunistic and zoogeographic relations of this group of *Diptera* is played by the great diversity of oecological elements and the strong biological differentiation within the limits of the family *Syrphidae*. In respect to the mode of development of the larvae and the biotopes occupied by the adult insects the following oecological groups may be discerned within this group of *Diptera*:

1. The aphidophagi. Predatory larvae chiefly feed on aphids, more rarely on small caterpillars of butterflies, and others. Adult insects usually widely distributed. They appear on the leaves and flowers of many plants. In the Tatra Mts. they have been caught on the species of the genera *Centaurea* L., *Helichrysum* MILL., *Senecio* L., *Polygonum* L., *Hieracium* L., *Thymus* L., *Veronica* L., *Cerastium* L., and others. The insects appear in forests, chrubberies, as well as on fields and dry mountain meadows; they are common on moist meadows neighbouring with forest areas in the lowlands and mountains. Numerous species from the genera *Syrphus* FABR., *Epistrophe* WALKER, *Sphaerophoria* ST. FARG. & SERV., and related ones, belong here.

2. Species, the development of which is connected with a water environment. The adult insects appear — as the preceding species — on flowers of the *Umbelliferae* and *Com-*

positae, of water plants or plants growing in the proximity of water. A group of mountain species may be separated here, e. g. *Eristalis jugorum* EGG. Most species are widely distributed, some appear also outside of the Palaearctic, e. g. *Eristalomyia tenax* (L.). Species from the genera *Eristalis* LATR., *Tubifera* MEIG., *Eristalomyia* ROND., and related ones, belong here.

3. The phytophagi. Larvae develop inside plant tissues. Many species with restricted or local ranges of distribution belong here; these are connected with the appearance of the food plants. Numerous species of the genera *Lampetia* MEIG., *Chilosia* MEIG., *Eumerus* MEIG., and related ones, belong here.

The genus *Chilosia* MEIG. shows a centre of distribution in the mountains of central Europe. The group with restricted range comprises e. g. *Chilosia sahlbergi* BECK., a boreal-alpine species, caught in the Tatra Mts. in the alpine pasture zone; its appearance is connected with the presence of the glacial crowfoot (*Ranunculus glacialis* L.) characteristic for the alpine zone in the Tatra Mts. Many species of the genus *Chilosia* MEIG. appear throughout Europe. An example of such a distribution may be given by *Ch. canicularis* (PANZ.), a species common in the Tatra Mts. attaining the greatest intensity of appearance in the mountains, and rare in the non-mountain areas. The adult insects appear near the water, on swamped meadows, on the flowers of many plants and on insolated large leaves on the banks of streams. The group of spring species appearing on willows in bloom comprises *Ch. grossa* (FALL.) caught by the author in the Tatra Mts.

The genus *Eumerus* MEIG. is another example of the above group; its larvae develop in the tissues of liliaceous plants. This genus has its distribution centre (within the Palaearctic) in the Mediterranean basin, in central Asia, and in the District of Ussuri. The adult insects are mostly xero- and thermophilous. Several species of this genus appear in Poland. None has been mentioned from the Tatra Mts. till now.

4. Species, the development of which is connected with arboraceous vegetation. The species of the genera *Zelima* MEIG., *Brachypalpus* MACQ., and others, may be listed here; their larvae develop under the bark of trees or in decaying

wood. Some species of the genus *Microdon* MEIG. are indirectly connected with forest vegetation; their larvae develop in ant nests.

5. Species the larvae of which develop in the nests of *Hymenoptera*. The genus *Volucella* GEOFF. belongs here; its larvae develop in the nests of the species of the genera *Bombus* LATR. and *Vespa* L. E. g. *Volucella bombylans* (L.) belongs here; the species is common in the Tatra Mts. up to the upper forest zone. The vertical distribution of the latter species and *Bombus* LATR. coincides. The adult insects are common on the flowers of many plants.

The types of geographic distribution.

The Tatric species of the family *Syrphidae* may be classified into the following types of geographic distribution:

1. The cosmopolite type.

The following species belong here: *Eristalomyia tenax* (L.), *Syrphus ribesii* (L.), *Epistrophe balteata* (DEG.), *Melanostoma mellinum* (L.), and *Melanostoma scalare* (FABR.).

2. The Holarctic type.

The elements comprising the whole Holarctic in their range count the following species: *Syrpitta pipiens* (L.), *Temnostoma bombylans* (FABR.), *Syrphus torvus* OST.-SACK., *Syrphus arcuatus* (FALL.), *Syrphus corollae* FABR., *Chrysotoxum bicinctum* L., *Sphaerophoria menthastri* (L.), *Sphaerophoria scripta* (L.), *Scaeva pyrastris* (L.), and others.

3. The Palaearctic type.

Following species appearing in the Tatra Mts. may be listed here: *Eristalis arbustorum* (L.), *Eristalis horticola* (DEG.), *Syrphus luniger* MEIG., *S. lunulatus* MEIG., *S. tricinctus* (FALL.), *S. vitripennis* MEIG., and others. *Zelina femorata* (L.) probably also belongs to the Palaearctic elements; this is a species distributed in Europe, Siberia, and China.

4. The Euro-Siberian type.

The elements with Euro-Siberian ranges take a marked share in the Tatric fauna of Syrphids. Example-wise several groups of species may be given here:

species known from Europe and Siberia: *Epistrophe cinctella* (ZETT.), *Eriozonea syrphoides* (FALL.), *Eristalis nemorum* (L.), *Microdon mutabilis* (L.), and others;

species distributed in Europe, Siberia, and Japan: *Volucella pellucens* (L.), *Chrysotoxum festivum* (L.), *Penthesilea asilica* (FALL.), and others;

following widely distributed species may also be examples of Euro-Siberian elements: *Chilosia scutellata* (FALL.), appearing in Europe, Siberia, and Asia Minor; *Orthoneura nobilis* (FALL.), a species distributed in Western Europe, in the central and northern part of the European Part of the U. S. S. R., near Archangielsk and on the Caucasus.

5. The European type.

The European element forms the chief of the Tatric fauna of the family Syrphidae. E. g. the following species may be listed here: *Chamaesyrphus scaevoides* (FALL.), *Brachypalpus bimaculatus* (MACQ.), *Arctophila mussitans* (FABR.), *Chilosia grossa* (FALL.), *Ch. moria* (ZETT.), *Ch. cynocephala* LOEW, *Ch. variabilis* (PANZ.), *Xanthandrus comtus* (HARR.), *Didea fasciata* MACQ., *Zelima sylvarum* (L.), *Microdon devius* (L.), and others.

Within the limits of the European type the following central-European elements may be discerned: *Ischyrosyrphus liophthalmus* (SCHIN. & EGG.), *Brachypalpus chrysites* EGG. (an early-spring species caught on *Crocus* sp.), *Chilosia caerulescens* MEIG., *Ch. personata* LOEW, and *Ch. rhynchops* EGG.

A species with a distribution type approximating to the Euro-Caucasian elements: *Penthesilea oxyacantha* (MEIG.); this species appears in central and northern Europe and in the Caucasus.

Within the limits of the European type a comparatively numerous group of species may be discerned; these species may be regarded as European-Mediterranean elements. Following species belong here: *Lampetia aenea* (L.), appearing in central and southern Europe, in North Africa, and Asia Minor; *Chilosia flavipes* (PANZ.), distributed in central and northern Europe, quoted from the Ural Mts. as well as from Spain and Morocco; *Zelima segnis* (L.), appearing in Europe and North Africa.

6. The mountain and boreal-alpine type.

The mountain element which chiefly determines the faunistic distinctness of the Tatra Mts. comprises many elements known in Poland only from the Tatra Mts, or widely distributed in Poland but most common in the Tatra Mts. Among the mountain elements three groups of species may be discerned: the mountain species, the boreal-alpine species, the alpine species.

a. Mountain species.

The following species (also appearing in lower mountain positions) may be taken as examples of species with typical mountain ranges:

Chilosia montana EGG., appearing in the mountains of Europe, quoted by SZILÁDY (1938) also from Turkestan, known in Poland — except the Tatra Mts. — also from the Karkonosze Mts.;

Spathiogaster ambulans (FABR.), appearing in the mountains of Europe, known in Poland — except the Tatra Mts. — also from the Sącz Valley;

Chrysotoxum fasciolatum (DEG.), living in the mountains of Europe and Asia, found in Poland only in the Tatra Mts.;

Eristalis jugorum EGG., appearing in the mountains throughout Europe, known in Poland — except the Tatra Mts. — from the Sącz Valley.

Except the species with a distribution similar to those named above as examples, a very numerous group of species may be discerned in the group of mountain species; this group comprises species with a maximum concentration in the mountains, and rare in the lowlands. The following characteristic Tatric species belong here:

Ischyrosyrphus glaucius (L.), appearing in all Europe, known in Poland outside mountain areas from Białowieża Forest and Western Pomerania;

Cinxia borealis (FALL.) and *Cinxia lappona* (L.), mountain species, common in the Tatra Mts., distributed in all the Holarctic;

Chilosia canicularis (PANZ.), living in the mountains of Europe, appearing mass-wise in the Tatra Mts., known in Poland — except the mountains — from the environs of Poz-

nań as well as from Western Pomerania and Oliwa near Gdańsk;

Platychirus manicatus (MEIG.), common in the mountains of all Europe;

Platychirus melanopsis LOEW, living in central Europe;

Volucella bombylans (L.), living in mountain areas in Europe and Asia, common in the Tatra Mts., known from several living-places in various parts of Poland;

Eristalis alpina (PANZ.) appearing in central Europe, known in Poland — except mountain areas — from Białowieża Forest, Chodecz near Łódź, as well as from Western Pomerania;

Volucella inanis (L.), living in all Europe, appearing in Poland in the Tatra Mts., and in south Poland (Sącz Valley, Ojców);

Cynorrhina fallax (L.), appearing in Europe and northern Asia, known in Poland — except mountain areas — from the environs of Warszawa and Kielce, and from Białowieża Forest and Western Pomerania.

Leucozona lucorum (L.) may also be counted as a characteristic species in this group, a mountain species common in the Tatra Mts., distributed throughout the Holarctic, known in Poland in mountain areas and in Białowieża Forest and Western Pomerania. A species with a distribution type approaching the ponto-alpine element may also be reckoned with the group of mountain species: *Arctophila bombiformis* (FALL.), appearing in Europe, in the Caucasus, and in the Black Sea Region.

b. Boreal-alpine species.

The following species could be counted into this group:

Chilosia illustrata (L.), a species distributed in Europe as well as central and northern Asia, appearing in Poland in the mountains and in lower mountains, mentioned from Pomerania in the north;

Syrphus lapponicus (ZETT.), distributed circumpolarly in the north: in arctic North America, Groenland, Finland, on the British Isles, and in the mountains of Europe (Alps, Sudety Mts., Tatra Mts.);

Chilosia sahlbergi BECK., distributed in northern Europe and the mountains of central Europe (Alps, Tatra Mts.);

Brachyopa conica (PANZ.), a species characteristic for the alpine zone, connected with the appearance of *Ranunculus glacialis* L., appearing in the mountains of all Europe (Alps, Tatra Mts.) and in the north also in the lowlands, found in Poland in the Sudety and Tatra Mts., in the north in Białowieża Forest and Western Pomerania;

Chrysotoxum arcuatum (L.), a European species, known in Poland from the Tatra and Sudety Mts., mentioned in the north from Western Pomerania.

c. Alpine species.

The investigations performed on the flies of the family *Syrphidae* cannot be a sufficient base to discern — within this group of *Diptera* — species characteristic of faunistic complexes appearing in the Tatra Mts. above the upper forest limit. A group of species of the *Syrphidae* family appearing in the alpine zone of the Tatra Mts. comprises mostly species appearing also in the lower vegetation zones: *Chilosia canicularis* (PANZ.), *Leucozona lucorum* (L.), *Myiatropa florea* (L.), *Eristalomyia tenax* (L.), and others.

Table 1. Percentage list of the separate types of geographic distribution in the Syrphid fauna of the Tatra Mts.

1. European type	46,4%
2. Mountain and boreal-alpine types	21,5%
3. Euro-Siberian type	13,2%
4. Holarctic type	10,4%
5. Palaearctic type	4,8%
6. Cosmopolite type	3,5%

Vertical distribution.

Table 2. Number of Dipteran species of the family *Syrphidae* appearing in the separate vegetation zones in the Tatra Mts.

Vegetation zone	Rd	Rg	K	H	T
Number of species	104	69	15	13	2

According to table 2 the ranges of vertical distribution of most species of the family *Syrphidae* reach only the upper

forest limit. Such an opinion is imposed by an examination of larger amounts of Dipteran material, comprising more families and systematically collected in comparable conditions in the various vegetation zones of the Tatra Mts. Many families — as the author could ascertain after an arrangement in the collection of Professor R. WOJTUSIAK was made — show much lesser tendencies of disappearance in the higher vegetation zones (e. g. *Empididae* and others). Quantitative investigations on the intensity of appearance of the separate populations in various vegetation zones of the Tatra Mts. need special research work.

REFERENCES

- BOBEK K. 1890. Przyczynek do fauny muchówek tarzańskich. Spraw. Kom. Fizj., Kraków, **25**: 218—242.
- BOBEK K. 1892. Przyczynek do fauny muchówek krakowskiego okręgu. Spraw. Kom. Fizj., Kraków, **28**: 8—28.
- BOBEK K. 1894. Przyczynek do fauny muchówek Przemyśla. Spraw. Kom. Fizj., Kraków, **29**: 114.
- BOBEK K. 1897. Przyczynek do fauny muchówek Podola galicyjskiego i okolicy Lwowa. Spraw. Kom. Fizj., Kraków, **32**: 79—86.
- BECKER Th. 1894. Revision der Gattung *Cheilosia* MEIG. Nova Acta der Ksl. Leop.-Carol. Deutschen Akademie der Naturforscher, Halle, **62**: 198—521.
- BECKER Th. 1921. Neue Dipteren aus meiner Sammlung. Mitt. Zool. Museum, Berlin, **10**: 1—93.
- COE L. 1953. Handbooks for the identification of British insects. *Diptera, Syrphidae*, London, **10**: 1—98.
- CZIŻEK K. 1909. Die Zweiflügler des Altvaters und des Tesstales. Ztschr. mähr. Landesmus., Brünn, **9**: 151—175.
- CZVALINA K. 1893. Neues Verzeichnis der Fliegen Ost- und Westpreussens. Osterprogr. Altstadt Gymn., Königsberg, 1—34.
- ENDERLEIN G. 1907. Biologische und faunistische Moor- und Dünenstudien. Ber. Westpr. Bot.-Zool. Ver., Danzig, **30**: 54—238.
- FRANZ H. 1943. Die Landtierwelt der Mittleren Hohen Tauern. Wien: 226—257.
- GRZEGORZEK A. 1872. Uebersicht der bis jetzt in der Sandezer Gegend West-Galiziens gesammelten Dipteren. Verh. zool. bot. Ges., Wien, **23**: 1—12.
- HAGEN H. 1849. Preussische Dipteren. Neue preuss. Provbl., Königsberg, **42**: 231—235.

- HELLÉN W. 1914. Beiträge zur Kenntnis der Gattung *Chilosia* Mg. Meddelanden af Societas pro Fauna et Flora Fennica, Helsingfors, **40**: 56—64.
- HELLÉN W. 1929. Neue Beiträge zur Kenntnis der *Chilosia*-Arten (Dipt.) Finnlands. Not. Ent., Helsingfors, **9**: 100—109.
- HELLÉN W. 1930. Zur Kenntnis der sibirischen Arten der Gattung *Chilosia* Mg., Not. Ent., Helsingfors, **10**: 26—29.
- HELLÉN W. 1947. *Chilosia angustigenis* BECK. in Ostfennoskandien wieder gefunden (*Syrphidae*). Not. Ent., Helsingfors, **27**: 16—17.
- KANERVO E. 1939. Inventa entomologica itineris Hispanici et Maroccani, quod a. 1926 decerunt Harald et Håkan LINDBERG. XXIV. *Diptera, Syrphidae*. Comment. biol., Helsingfors, **7**: 1—6.
- KARL O. 1935. Die Fliegenfauna Pommerns, *Diptera, Brachycera*. Stett. Ent. Zeit., Stettin, **96** (2): 248—260.
- KLOET G. & HINCKS W. 1945. A check list of British insects. Stockport: 1—483.
- KUNTZE R. & NOSKIEWICZ J. 1938. Zarys zoogeografii Polskiego Podola. Prace Nauk. Wyd. Tow. Nauk., Dział II, Lwów, **4**: 1—538.
- LECLERCQ M. 1955. Catalogue des *Syrphidae* de Belgique. Bull. Ann. Soc. Roy. Ent. Belg., Bruxelles.
- LOEW H. 1840. Bemerkungen über in der Posener Gegend einheimische Gattungen mehrerer Zweiflüglergattungen. Schulprogr. Kais. Friedr. Gymn., Posen, **4**: 1—40.
- LOEW H. 1843. Bemerkungen über die bekannten europäischen Arten der Gattung *Chrysogaster* Mg. Stett. Ent. Zeit., Stettin, **7**: 204—212, **8**: 240—255, **9**: 258—281.
- LOEW H. 1857. Die europäischen Arten der Gattung *Chilosia*. Verh. zool. bot. Ver., Wien, **7**: 579—616.
- LOEW H. 1870. O dipterach dotąd na galicyjskich stokach Tatr spostrzeżonych. Rocznik ces.-król., Tow. Nauk. krak., Kraków, **19**: 1—20.
- MALSKI K. 1957. Śląskie gatunki rodzaju *Chilosia* Mg. (*Diptera, Syrphidae*). Polsk. Pismo Ent., Wrocław, **26**: 233—248.
- MOUCHA J. & ŠTYS P. 1954. Příspěvek k poznání vertikálního rozšíření některých pestřenek (*Syrphidae, Dipt.*) v Československu. Přír. sbor. Ostr. kr., Opava, **25**: 95—104.
- MOUCHA J. 1957. Zur Kenntnis der Syrphidenfauna Oesterreichs (*Dipt., Syrphidae*). Acta Faun. Ent. Musei Nat. Pragae, Praha, **2**: 19—24.
- NOWICKI M. 1867. Zapiski z fauny tatrzańskiej. Spraw. Kom. Fizj., Kraków, **1**: 179—206.
- NOWICKI M. 1868. Zapiski z fauny tatrzańskiej. Ibidem, **2**: 90—91.
- NOWICKI M. 1869a. Zapiski fauniczne. Ibidem, **3**: 145—150.
- NOWICKI M. 1869b. Muchy okolic Rzeszowa. Ibidem, **3**: 153—154.
- NOWICKI M. 1873. Beiträge zur Kenntnis der Dipterenfauna Galiziens. Krakau: 1—35.
- PAWŁOWSKI B. 1956. Flora Tatr. Warszawa, **1**: 1—672.
- RÜBSAAMEN E. H. 1901. Bericht über meine Reise durch die Tucheler

- Heide in den Jahren 1896 und 1897. Schr. Natur. Ges. Danzig, **10**: 1—70.
- SACK P. 1925. Die Zweiflügler des Urwaldes von Bialowies. Abh. mat.-naturw. Abteil. Bayer. Akad. Wiss., München, **5**: 259—277.
- SACK P. 1932. *Syrphidae* in LINDNER, Die Fliegen der Paläarktischen Region. Stuttgart: 1—452.
- SCHUMMEL E. 1841. Verzeichniss und Beschreibung der vom Verfasser bis jetzt in Schlesien gefangenen Zweiflügler der Syrphidenfamilie. Uebers. Arb. Ver. schles. Ges., Breslau: 112—126; 163—170.
- SPEISER P. 1903, 1904. Ergänzungen zu CZWALINAS „Neuen Verzeichniss der Fliegen Ost- und Westpreussens“. Allgem. Zeitschr. f. Entomol., Berlin, **8**: 161—165; **9**: 265—268. 1905. Zeitschr. f. wiss. Insectenbiol., Berlin, **1**: 405—409.
- STACKELBERG A. 1927. Uebersicht der Paläarktischen Arten der Unterfamilie *Cinxinae* (Dipt., *Syrphidae*). Mat. Komissi po Izučeniu Jakutskoj Avtonomnoj Soc. Rep., **20**: 1—27.
- STACKELBERG A. 1949. New data on the genus *Eumerus* MG. (Dipt., *Syrphidae*) of the Palaearctic fauna. Ent. Obozr., Moskva, **30**: 426—438.
- STACKELBERG A. 1950. Dvukrylyje-Diptera; in Životnyj mir SSSR, **3**, zona stepej. Moskva—Leningrad: 162—213.
- STACKELBERG A. 1950. Kratkij obzor palearktičeskich vidov roda *Mallota* MG. (Dipt., *Syrphidae*). Ent. Obozr., Moskva, **31**: 285—296.
- STACKELBERG A. 1953. Palearktičeskije vidy roda *Orthoneura* MACQ. (Diptera, *Syrphidae*). Ent. Obozr., Moskva, **33**: 342—357.
- STACKELBERG A. 1953. Kratkij obzor palearktičeskich vidov roda *Sphegina* MG. Trud. zool. Inst. Akad. Nauk SSSR, Moskva, **13**: 373—386.
- STACKELBERG A. 1955. Palearktičeskije vidy roda *Penthesilea* MG. (Dipt., *Syrphidae*). Ent. Obozr., Moskva, **34**: 340—349.
- SUSTER P. 1943. Syrphides de Roumanie. Bull. Sect. Sci. Acad. Roum. București, **25**: 557—570.
- SUSTER P. 1946a. Neuer Beitrag zur Kenntnis der Schwebfliegen (*Syrphidae*) Rumäniens. Bull. Sect. Sci. Acad. Roum. București, **28**: 668—675.
- SUSTER P. 1946b. Diptères des environs de Zlatna. Bull. Sect. Sci. Acad. Roum. București, **28**: 386—399.
- SZILÁDY Z. 1938. Ueber Paläarktische Syrphiden. Ann. hist. nat. Mus. hung., Budapest, **31** (11): 137—143.
- SZNABL J. 1881. Spis owadów dwuskrzydłych zebranych w Królestwie Polskim i Guberni Mińskiej. Pam. Fizj., Warszawa, **1**: 357—390.
- TIMON-DAVID J. 1952. Contribution à la connaissance de la faune entomologique du Maroc. *Diptera: Asilidae, Bombyliidae, Nemestrinidae* et *Syrphidae*. Bull. Soc. Sci. nat. Maroc., Rabat, **31** (1951): 131—148.
- TROJAN R. 1953. *Syrphidae* okolic Warszawy (Diptera). Fragmenta Faunistica Musei Zool. Pol., Warszawa, **6**: 449—463.
- VIMMER A. 1908. O muší fauně Krkonošské. Příroda a škola, Olomouc, **6**: 329—334.

ZELLER P. C. 1843. Die schlesischen Arten der Dipterengattung *Sphegina*. Stett. Ent. Zeit., Stettin, 10: 302—305.

ZIMINA L. 1954. Żurčalki (*Diptera, Syrphidae*) rajona gosudarstvennoj lesnoj polosy Kamyšin—Stalingrad. Zool. Žurn., Moskva, 6: 1282—1288.

STRESZCZENIE

Wiadomości o tatrzańskie faunie muchówek z rodziny *Syrphidae* (*Diptera*) zawarte są głównie w spisach faunistycznych obejmujących całość muchówek lub ich dużą część (NOWICKI, 1867, 1868, 1869a, 1869b, 1873; LOEW, 1870; BOBEK, 1890). Podstawowym spisem faunistycznym z terenów b. Galicji, a także z Tatr jest wykaz obejmujący całość muchówek opracowany przez M. NOWICKIEGO w roku 1873. Uzupełnieniem tych wiadomości są dane z terenu Tatr Słowackich zawarte w pracy o rozsiadleniu pionowym muchówek z rodziny *Syrphidae* na obszarze Czechosłowacji (MOUCHA & ŠTYS, 1954).

Niniejsze opracowanie rodziny *Syrphidae* zostało głównie oparte na materiałach zebranych przez autora w latach 1956 i 1957 na terenie Tatrzańskiego Parku Narodowego w ramach prac zespołowych Instytutu Zoologicznego P. A. N., Oddział w Krakowie. W szczegółowym wykazie gatunków autor wymienia z Tatr 144 gatunki muchówek z rodziny *Syrphidae*, w tym 4 gatunki nowe dla Polski: *Ischyrosyrphus liophthalmus* (SCHIN. & EGG.), *Epistrophe annulata* (ZETT.), *Chilosia sahlbergi* BECK. i *Chilosia vicina* (ZETT.) — oraz 21 gatunków, które dotychczas nie były z obszaru Tatr wymieniane: *Brachypalpus bimaculatus* (MACQ.), *Brachypalpus chrysites* EGGER, *Chamaesyrphus scaevoides* (FALL.), *Microdon devius* (L.), *Syrphus braueri* EGGER, *Epistrophe lasiophthalma* (ZETT.), *Syrphus nitens* (ZETT.), *Syrphus venustus* MEIG., *Melanostoma scalare* (FABR.), *Spathiogaster coarctata* (SCHUMM.), *Psilota atra* (FALL.), *Chilosia bergenstammi* BECK., *Chilosia caerulea* (MEIG.), *Chilosia grossa* (FALL.), *Chilosia pascuorum* BECK., *Chilosia personata* LOEW, *Eristalis jugorum* EGGER, *Tubifera pendula* (L.), *Penthesilea berberina* FABR., *Penthesilea oxyacanthae* (MEIG.).

Автор омавіа р6внїеь стосунки фаунїстичне і зоогеографїчне гатунк6в муч66век з родзїны *Syrphidae* вист6пуючых на обсааже Татр Польскїх і вур66зня в обр6бе теї групы муч66век — зе взуууууу на спос6б розвоу ларв і заїмowane бїотопы преез оwaды доросле — пїеууу груп екологїчных: афїдофаги, гатунки, к666рых розв6уь звїазаны єст зе шр6дowїськїм водным, фїтофаги, гатунки, к666рых розв6уь звїазаны єст з роушїнносууу древуу — і гатунки, к666рых ларвы розвїаюає сїе в гуїаздаах блонкоскрїздууу.

Гатунки татраууускїе з родзїны *Syrphidae* автор залїча до шеууеїуу тїпу6в роушїденїа географїчного: тїп космополїтїчний, холарктуьчний, палеарктуьчний, eurosїberyjski, europejski, г666рський і borealnoalpejski. Автор характеризує г6666внїе елементы складове пошчеуууу66666нїх тїпу6в роушїденїа географїчного ораа зєтавуа процєнтову удуаїа пошчеуууу66666нїх тїпу6в роушїденїа географїчного в фаунїе *Syrphidae* Татр (tab. 1).

РЕЗЮМЕ

Сведєнїа о фаууе двукрылуу Татр їз сємєїства *Syrphidae* (*Diptera*) содеруаєтєа главнїм обраа в фаууїстїчєскїх спїскаах, вмєщаюуїх вєх двукрылуу їлї б66666ууу їх ааууу (Новїцкї, 1867, 1868, 1869a, 1869b, 1873; Лбуев, 1870; Бобек, 1890). Осувнїм фаууїстїчєскїм спїском їз раїона б. Галїцїї, а тааке Татр явуаєтєа спїсок, вмєщаюуїй вєх двукрылуу, обрааотаннїй М. Новїцкїм в 1873 году. Д66666666нїем єтїх свєдєнїї явуаюуа дaннїе їз раїона словaцкїх Татр содеруаюуєєа в труде о перпендукулярн6м рассєлєнїї двукрылуу їз сємїї *Syrphidae* на тєрїторїї Чєхословaкїї (Моухa & Штїс, 1954).

Нaст666666ууу обрааотку сємїї *Syrphidae* автор оїраєт главнїм обраа на собрaнн6м мауєрїалє в 1956 і 1957 гааах в прїродн6м заповєднїкє Татр в раааах куллектуївнїх раа6 Зоологїчєск6го Інстїтуа П. А. Н., 6дєл в Краковє. В поаробн6м перєчєнє вїд6в, автор перєчїслюєт 144 вїд6 двукрылуу їз сємїї *Syrphidae* в том 4

вида новых для Польши: *Ischyrosyrphus liophthalmus* (SCHIN. & EGG.), *Epistrophe annulata* (ZETT.), *Chilosia sahlbergi* BECK. и *Chilosia vicina* (ZETT.), а также 21 видов которые из района Татр до настоящего времени не были указаны: *Brachypalpus bimaculatus* (MACQ.), *Brachypalpus chrysites* EGGER, *Chamaesyrphus scaevoides* (FALL.), *Microdon devius* (L.), *Syrphus braueri* EGGER, *Epistrophe lasiophthalma* (ZETT.), *Syrphus niten's* (ZETT.), *Syrphus venustus* MEIG., *Melanostoma scalare* (FABR.), *Spathiogaster coarctata* (SCHUMM.), *Psilota atra* (FALL.), *Chilosia bergenstammi* BECK., *Chilosia caerulescens* (MEIG.), *Chilosia grossa* (FALL.), *Chilosia pascuorum* BECK., *Chilosia personata* LOEW, *Eristalis jugorum* EGGER, *Tubifera pendula* (L.), *Penthesilea berberina* FABR., *Penthesilea oxyacanthae* (MEIG.).

Автор обсуждает также фаунистические и зоогеографические отношения видов двукрылых из семьи *Syrphidae* появляющихся в районе польских Татр и выделяет с предела этой группы двукрылых — с точки зрения развития личинки и с занятых биотопов взрослыми насекомыми — пять групп экологических: афидофаги, виды которых развитие связано со средой воды; фитофаги, виды которых развитие связано с растительностью деревьев и виды которых личинки развиваются в гнездах перепончатокрылых. Виды района Татр из семьи *Syrphidae* автор зачисляет к шести типам географического расселения: тип космополитический, голарктический, палеарктический, евросибирский, европейский, горный и бореальноальпийский. Автор дает характеристику главных элементов отдельных типов географического расселения, а также представляет в процентах участие отдельных типов географического расселения в фауне *Syrphidae* Татр (Табл. 1).

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